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ABSTRACT

This notebook contains the revised standards and guidelines for the National Center for Education Statistics (NCES), as well as an updated and consolidated version of NCES legislation. It is intended for NCES staff and contractors as a guide in their data collection, analysis, and dissemination. These standards and guidelines define the limits of acceptable applications and use, to ensure that NCES surveys, products, and procedures become more uniform and have higher quality. Twenty standards and two guidances were adopted in January 1992 in the following areas: (1) planning and testing; (2) contract management and operations; (3) statistical processing procedures; (4) data provisions and analysis; and (5) evaluation and documentation. The NCES legislation is provided. (SLD)

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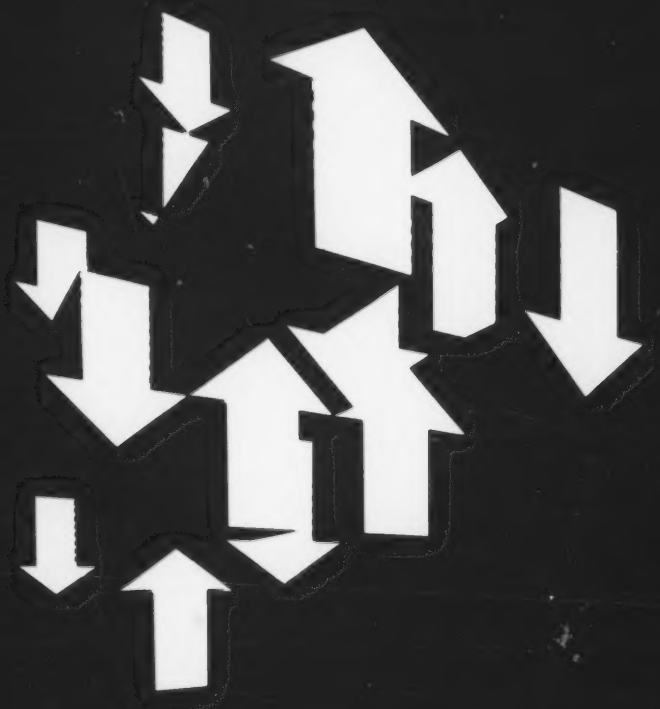

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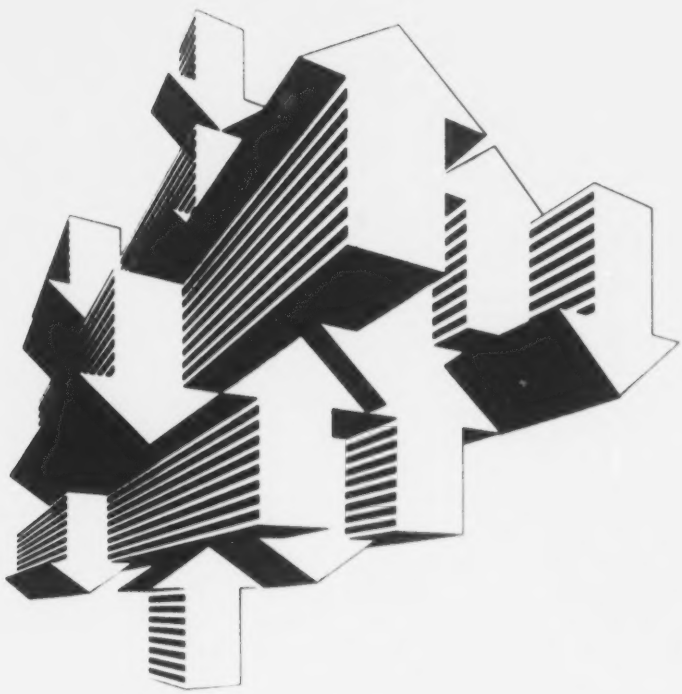

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National Center for Education Statistics

"The purpose of the Center shall be to collect, and analyze, and disseminate statistics and other data related to education in the United States and in other nations."—Section 406(b) of the General Education Provisions Act, as amended (20 U.S.C. 1221e–1).

June 1992

FOREWORD

This document contains the revised technical standards and guidelines for the National Center for Education Statistics (NCES) and an updated and consolidated version of the NCES legislation.

I expect that NCES standards and guidelines will be followed by all Center staff and contractors:

- New Center staff should develop a working knowledge of the standards and guidelines, and
- All Requests for Proposals (RFP's) must include a section that references the standards and guidelines and requires their use in work conducted for the Center.

The Statistical Standards and Methodology Division will initiate formal evaluations from time to time to ensure that the standards and guidelines have been implemented in all phases of the Center's work and to review their operational feasibility.

These revised standards are critical to the Center's Federal statistical responsibilities as an agency. They: (1) codify how we expect to behave professionally, (2) indicate the basis on which we expect to be judged by our peers in the statistical community, (3) represent the quality we expect in any of our efforts or those of our contractors and grantees, (4) provide a means to assure consistency among the studies the Center conducts, and (5) document, for users, the methods and principles the Center employs in the collection of data.

I consider the revised standards and guidelines to be a visible commitment to quality in all of the Center's activities.

Emerson J. Elliott
Acting Commissioner

ACKNOWLEDGMENTS

Standards, Guidance, and Legislation was prepared by the Statistical Standards and Methodology Division, in the National Center for Education Statistics, Office of Educational Research and Improvement. Associate Commissioner Roger Herriot provided general supervision.

Emmett L. Fleming, Jr., Statistician, Statistical Standards and Methodology Division, oversaw and provided the specific direction for the development of this material. Leslie and Iris Silverman began the revision of the National Center for Education Statistics Standards during 1989. Numerous NCES staff members contributed to the revision of these standards.

Continuing leadership, review, comment, and guidance were provided by the Advisory Council on Education Statistics. We wish to thank everyone who contributed to this revision.

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INTRODUCTION

Purpose of Standards

This notebook contains the revised standards and guidelines for the National Center for Education Statistics. It also contains an updated and consolidated version of NCES legislation. It is intended for NCES staff and contractors to guide them in their data collection, analysis, and dissemination activities. The revised standards and guidelines also present a clear statement for NCES contractors and users regarding how data should be collected in NCES surveys, and the limits of acceptable applications and use. With the adoption and use of the revised standards and guidelines, expectations are that NCES surveys, products, and procedures shall become more uniform and of a higher quality.

Background of Standards and Guidelines

The development of formal standards at NCES began in 1974 with the passage of Public Law 93-380. With this law Congress established the Advisory Council on Education Statistics (ACES) which was responsible for establishing standards to ensure that statistics and analyses disseminated by the Center are of high quality. In 1984, ACES requested the National Academy of Science (NAS) to undertake an evaluation of NCES surveys and statistical products.

NAS found that written standards did not exist in NCES. NCES immediately took steps to develop and implement written standards. Twenty-one (21) standards were developed and were formally accepted by ACES on March 16, 1987 and were published in a booklet entitled " Standards and Policies" and were distributed throughout NCES.

During 1989, a process to revise the existing standards was initiated. Since the initial standards were developed, NCES professionals have become considerably more knowledgeable and sophisticated on the subject of statistical and operational standards. It was decided that the revision should be done in-house using a bottoms-up approach. Staff committees established to review the standards agreed that the term "standard" should be defined as those procedures that must be done, and guidelines those things that are desirable and should be done but, may not be fully met. There were many in-house reviews of the several drafts that were promulgated. Several presentations were made to the ACES and their collective advice was reflected in the later drafts of the standards and guidelines. The compendium of standards was considered as a whole by the Senior staff of NCES. Finally, the Center's strategy is to periodically review the standards and guidances, and as obstacles are overcome, many of the guidances may become standards.

Status of the Standards

There are currently twenty (20) standards and two (2) guidances adopted by the National Center for Education Statistics in January 1992. These are the same standards

and which were accepted by the Advisory Council on Education Statistics in September 1991.

Monitoring Activities and Plans

The Center has awarded a contract to monitor the implementation of its standards and guidelines within the Center. The major purpose of this procurement is to design, construct, and implement a monitoring, evaluation, and reporting system for the NCES standards and guidelines. One major phase of this procurement is to establish current profiles for major NCES surveys and products in relation to the standards and guidelines. The contract will develop appropriate measures of compliance to the standards and guidelines and to design, develop and implement a PC-based monitoring and reporting system for standards and guidelines.

Additional Information

For additional information on NCES Standards and Guidelines, please contact:

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NATIONAL CENTER FOR EDUCATION STATISTICS
OFFICE OF EDUCATIONAL RESEARCH AND IMPROVEMENT
U.S. DEPARTMENT OF EDUCATION

SUBJECT: STANDARD FOR INITIAL PLANNING OF STATISTICAL SURVEYS

EFFECTIVE DATE: 1/1/92 **NCES STANDARD: I-01-92**

PURPOSE: To provide broad initial guidance in designing and implementing surveys; and to provide input to the decision on whether or not to proceed with the preliminary design and implementation plans of a specific survey or survey system.

STANDARD: The initial plan for developing a survey or survey system must include the rationale for the survey data, and discussion of: goals and objectives, related surveys and research, user needs, survey methodology, target population, analytic objectives and methods, basic time series items, implementation schedule, and preliminary cost and staffing estimates. This will result in an initial planning document that will be presented to the OC for review and a decision on whether to proceed with the design phase. Ideally, the initial plan and review by OC should be completed prior to an OMB budget request. If this is not possible, it needs to be done prior to preparation of an RFP. The plan must be of sufficient detail to serve as the introduction to a position paper or statement of work for the survey design work to follow.

GUIDELINES: To meet this standard the plan should include the following:

a) GUIDELINE: Justification of the survey in terms of issues and information needs, hypotheses to be tested or problems to be solved, stated in terms of specific goals and objectives.

b) GUIDELINE: A review of related studies, surveys and reports of Federal and non-Federal sources to ensure that part or all of the data are not available from some existing source or could not be more appropriately obtained by adding questions to existing surveys sponsored by NCES or other agencies.

c) GUIDELINE: A schedule to consult representatives of respondent groups and data users, and evidence that initial consultations have taken place.

d) GUIDELINE: A preliminary survey design that discusses the proposed target population response rate goals, sample design, data collection methods, and methodological issues to be resolved.

STANDARD: I-01-92

e) GUIDELINE: A preliminary analysis plan that identifies analysis issues, objectives, major variables, and proposed statistical techniques.

f) GUIDELINE: A preliminary publication and dissemination plan that identifies proposed major publications and their target audiences.

g) GUIDELINE: A preliminary time schedule that accounts for the complete survey cycle from planning to data release.

h) GUIDELINE: A preliminary independent government cost estimate that includes staffing and other costs.

RELATED STANDARDS

o NCES Standard for the Design of a Survey, I-02-92

o NCES Standard for Maintaining Data Series, IV-05-92

NATIONAL CENTER FOR EDUCATION STATISTICS
OFFICE OF EDUCATIONAL RESEARCH AND IMPROVEMENT
U.S. DEPARTMENT OF EDUCATION

SUBJECT: STANDARD FOR THE DESIGN OF A SURVEY

EFFECTIVE DATE: 1/1/92 **NCES STANDARD: I-02-92**

PURPOSE: To provide sufficient specificity for the various aspects of a survey to permit substantive and technical review and comment.

STANDARD: The survey must be designed to achieve the target parameters shown below. If the goal is to produce separate State estimates, the design parameters apply to each State. A document must be developed prior to any data collection that delineates the basic design of a survey or survey system. The document must address the objectives of the survey as indicated in the initial planning document, how the objectives will be met by the outcomes of the survey, and the personnel resources, funds, and time needed to achieve the desired level of data quality, i.e. accuracy, reliability, validity. This document, as revised following comments, will serve as the basis for field testing and, once revised on the basis of field test results, will form the core of the specific tasks section of the statement of work for data collection.

DESIGN PARAMETERS:

a) Response rates for universe surveys of at least 95 percent if the data are not going to be weighted, and 90 percent, if the data are to be weighted.

b) A response rate of at least 90 percent for longitudinal sample surveys (for the base year and each follow-up) and at least 85 percent for cross-sectional sample surveys; if the activity is a survey system consisting of a cross-sectional survey with a longitudinal followup of a subsample, the target response rates are to be at least 85 percent for the base year and 90 percent for each followup;

c) Within any stratum of a sample, the response rate must be at least 85 percent for longitudinal surveys and 80 percent for cross-sectional surveys; and

d) The desired target item response rate for each critical variable must be at least 90 percent.

STANDARD: I-02-92

GUIDELINES: To meet this standard, the documentation should include the following:

a) GUIDELINE: A refinement of objectives of the survey or survey system such as:

a. The information needs that will be met;
b. The content area coverage;
c. Target population(s);
d. Primary methods of analysis;
e. Primary user requirements;
f. Analytic and policy purposes; and
g. Uses in NCES compendia.

b) GUIDELINE: An outline of the sample design plus indications of how it will provide sufficient coverage to meet the objectives of the survey. The outline should consider, if appropriate to the proposed survey, the following:

a. Identification of the sampling frame;
b. Sampling strata;
c. Sample size by stratum;
d. Expected yield by stratum;
e. Estimated efficiency of sample design;
f. Expected reliability of key estimates; and
g. Appropriate variance estimation procedures.

c) GUIDELINE: An identification of all survey data items and how these items can best be measured, (e.g. through questionnaires, tests), and evidence that these items can be measured both accurately and reliably.

d) GUIDELINE: An analysis plan that provides strong evidence that the basic information needs that justify the study can be met, either descriptively or analytically. The plan should demonstrate how the proposed sample, the survey items, and measurement methods are related to the objectives of the survey.

e) GUIDELINE: Consideration of the multiple analytic uses of the data by NCES and by the outside users beyond provision of basic estimates. This includes the use of complex analytic techniques, various levels of analysis, etc. The plan should consider provision of appropriate weights and calculation of appropriate variances for these uses.

f) GUIDELINE: If the mode of measurement is through a survey questionnaire, develop a set of specifications for the questionnaire or use a previous questionnaire. Discussion of how the items will yield the desired information and will minimize response burden should be presented. A plan for testing the questionnaire should be identified (Standard for Testing Survey Systems: I-03-92) and should demonstrate conformity to the general time frame of the survey and allow sufficient time for redesign of the questionnaire (based on test results).

g) GUIDELINE: A description of the anticipated data collection procedures that will yield data with the desired level of quality. This section should encompass:

a. Timing of data collection;
b. Primary mode of collection;
c. Methods for handling non-response and/or inadequate response;
d. Methods for testing the data collection methodology.

h) GUIDELINE: General requirements for the data processing system, in terms of both hardware configurations and appropriate software. How these requirements are consistent with the general design of the study, meet user specifications, and conform to the Standard for Timely Processing and Release of Data Tapes should be indicated. It is understood that these requirements may vary by contractor and that contractor input is necessary to satisfy this guideline.

i) GUIDELINE: A plan for preserving the confidentiality of the data that considers NCES' legislated mandate, the questionnaire design, analysis, data systems, files, and costs.

j) GUIDELINE: A plan for quality control of each phase of the survey process which will permit monitoring and assessing the performance of that phase as it is being implemented. The plan should include procedures for modifying any design parameters including response rates that are not meeting expectations and testing modifications before changes are made in on-going survey procedures. It is understood that these requirements may vary by contractor and that contractor input is necessary to satisfy this guideline.

k) GUIDELINE: An outline of the general parameters for evaluating survey procedures and results that conform to the Standard for the Evaluation of Surveys.

STANDARD: I-02-92

l) GUIDELINE: General specifications for an internal project management system that identifies (1) critical activities and key milestones of the survey that will be monitored; (2) the time relationship among them; and (3) a strategy for monitoring them and maintaining the timelines of the study.

m) GUIDELINE: Internal estimates of cost and other resources needed by components of the study, including the pilot test and the evaluation.

n) GUIDELINE: Documentation should account for the impact of the sampling error on the interpretation of the survey. Consideration should also be given how to reduce sampling error in the survey, and this should be appropriately documented.

RELATED STANDARDS / GUIDELINES

o NCES Standard for Initial Planning of Statistical Surveys, I-01-92

NATIONAL CENTER FOR EDUCATION STATISTICS
OFFICE OF EDUCATIONAL RESEARCH AND IMPROVEMENT
U.S. DEPARTMENT OF EDUCATION

SUBJECT: STANDARD FOR TESTING SURVEY SYSTEMS

EFFECTIVE DATE 1/1/92 **NCES STANDARD: I-03-92**

PURPOSE: To ensure that all components of a survey system will function as intended when implemented in the full-scale survey. This includes all phases, from initial universe designation through weighting and files creation.

STANDARD: Components of a survey system need to be successfully demonstrated through previous work or pretested prior to implementation of the full-scale survey. The design of a pretest must reflect conditions anticipated to occur in the full-scale study, particularly those likely to pose difficulties for the survey. If the guidelines for this standard cannot be met due to timing or budget problems, the proper course of action will be determined based on consultation with the Chief Statistician. Documentation of the pretest needs to include the design of the pretest, a description of the procedures followed, analysis of the extent to which the survey components met the pre-established criteria, discussion of other potential problems uncovered during the pretest, and recommendations for changes in the design to solve the problems.

GUIDELINES: To meet this standard the following should be followed:

1. For a new survey, the entire survey system should be pretested. Elements to be tested and measured, which may include alternative approaches to accomplishing a particular task, could include:

    a. Frame development
    b. Sample selection
    c. Questionnaire design
    d. Data collection
    e. Response rates -- sample and item
    f. Data processing (e.g. entry, editing, imputation)
    g. Estimation (eg. weighting, variance computation)
    h. File creation
    i. Tabulations

2. For an ongoing survey, elements being changed as a result of the evaluation of the survey (See Standard for Evaluation of Surveys, V-01-92) and new elements or content should be pretested.

3. The evaluation criteria for a successful pretest as well as methods for measuring the pretest results against the criteria should be developed prior to the implementation of a pretest. Key evaluation criteria are established during the design stage and should be reviewed by the Associate Commissioner of the division of origin. If the criteria were not met, this would mean that a survey component should not be implemented without pretesting a redesigned component in some fashion.

4. The results of a pretest should be available and analyzed prior to making a decision to implement the full-scale survey and enough time should be allowed in planning the survey for this to occur.

5. Survey design and instrumentation should be revised to reflect modifications necessary due to the results of the pretest. A revised budget should be developed to reflect both changes in design and knowledge gained during the pretest about resource requirements.

RELATED STANDARDS

- o NCES Standard for Initial Planning of Statistical Surveys, I-01-92
- o NCES Standard for the Design of a Survey, I-02-92
- o NCES Standard for Evaluation of Surveys, V-01-92

NATIONAL CENTER FOR EDUCATION STATISTICS
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SUBJECT: STANDARD FOR EDUCATIONAL TEST

EFFECTIVE DATE 1/1/92 **NCES STANDARD: I-04-92**

PURPOSE: To ensure that educational tests produced by NCES meet professional standards of integrity.

STANDARD: NCES adopts as its standard the "primary standards" specified in Standards for Educational and Psychological Testing (American Psychological Association, 1985) and the four areas specified in the Code of Fair Testing Practices in Education (Joint Committee on Testing Practices, American Psychological Association, 1988). The primary standards apply to performance tests, questionnaires (such as rating scales), and behavioral observations. The four areas apply to developing and selecting tests, interpreting scores, striving for fairness, and informing test takers.

GUIDELINES: To meet this standard, educational testing should conform to the following:

1. What the test measures and what the test is used for should be defined.

2. The procedure used to develop tests should be clearly specified.

3. Test questions and related materials should be reviewed and revised to avoid potentially insensitive content or language.

4. Evidence of validity should be presented for each recommended use of the test.

5. The characteristics, usefulness, and limitations of the test for the intended purpose should be accurately represented.

6. Evidence of reliability and standard errors of measurement should be presented.

7. Evidence should be presented concerning the appropriateness of the test for groups of different racial, ethnic, or linguistic backgrounds that are likely to be tested. Procedures should help insure that differences in performance are related primarily to skills under assessment rather than to irrelevant factors.

8. Standardized test administration, scoring, and reporting procedures should be followed.

9. Special testing conditions should be arranged for special populations of examinees, when feasible. The comparability of resulting scores should be explored.

10. Score reports should provide easily understood, clear, and accurate descriptions of test performance. The meaning and limitations of reported scores should be explained.

11. Users should be warned to avoid specific, reasonably anticipated misuses of test scores.

12. The rights of test takers should be protected. Test takers should be informed how long scores will be kept on file and to whom and under what circumstances test scores will or will not be released.

RELATED STANDARDS

- o NCES Standard for Initial Planning of Statistical Surveys, I-01-92
- o NCES Standard for Testing Survey Systems, I-03-92
- o NCES Standard for Maintaining Confidentiality, IV-01-92

RELATED CHECKLIST, FORMS AND DOCUMENTATION

- o Standards for Educational and Psychological Testing, American Psychological Association, 1985.

- o Code of Fair Testing Practices in Education, Joint Committee on Testing Practices, American Psychological Association, 1988.

CHECKLIST FOR EDUCATIONAL TESTS

A. Evidence of Validity

1. When a test measures a construct, evidence should be presented that the test scores are highly related to that construct (include inter-item correlations, bases for weighting subscores, theoretical basis for the construct, and a description of the construct-related validity study).

2. If a test is purported to be related to an outcome criterion, then evidence of the relationship between the test score and the outcome measures must be provided. Information should be available related to the rationale for choosing criteria, justification for selecting cut-scores, and a description of the criterion-related validity study.

3. When test content is especially important (as in achievement tests), content-related evidence of validity should be provided. Clear definition for the content universe, domain specifications, item specifications, and a description of the content-related validity study should be provided.

B. Evidence of Reliability and Standard Errors of Measurement

1. Methods of calculating reliability coefficients and standard errors of measurement should be reported (include equations, and a description of the reliability study).

2. The psychometric procedure underlying the calculation of reliability indices should be specified (such as classical measurement theory, item response theory, etc.)

3. Limitations in the reliability indices should be specified. For example, how does the index vary with changes over populations, the effects of adjustments for attenuation (e.g., due to restrictions of the measurement range) and the effects of speed (due to testing time limits).

C. Test Development Procedures

1. Domain definitions and specifications should be provided. Similarly, item and test specifications should be clearly reported.

2. Item selection procedures should be indicated (including statistical item performance data, item bias information, and psychometric criteria for selection.)

CHECKLIST FOR EDUCATIONAL TEST CONT:

D. Test Administration

1. Administration procedures should be standardized to reduce unwanted variation in test scores. The same administration manuals, training and testing conditions conditions should be used.

2. Steps should be taken to insure test security, proper distribution and collection of materials, and a minimum of respondent burden.

E. Scoring and Reporting

1. Scoring procedures should be standardized, documented and checked for accuracy.

2. The analysis of item responses or test scores should be clearly described (such as scaling, norming, equating, etc.)

3. Score reports should be promptly reported in a standard format that is easy to read.

4. The generalizability and limitations of reported scores should be presented.

F. Special Testing Conditions

1. Testing modifications should be provided for examinees with handicapping conditions or language differences.

2. When feasible, the validity, reliability and other indices of test integrity should be investigated for special populations.

G. Rights of Test-Takers

1. Proper consent should be obtained prior to test administration.

2. Rights of confidentiality should be guaranteed for all uses of the data.

NATIONAL CENTER FOR EDUCATION STATISTICS
OFFICE OF EDUCATIONAL RESEARCH AND IMPROVEMENT
U. S. DEPARTMENT OF EDUCATION

SUBJECT: GUIDANCE FOR DEVELOPING A REQUEST FOR PROPOSAL (RFP) FOR SURVEYS

EFFECTIVE DATE: 1/1/92 **NCES GUIDELINE: II-01-92**

PURPOSE: To assist NCES staff to prepare an RFP containing information needed for an offerer to provide a proposal demonstrating technical and managerial competence for the successful completion of all phases of surveys. Preparing the RFP is only one element in the contract acquisition process. The proposal selection criteria are established in the RFP, but the actual process of selection is governed by Federal and Department of Education regulations.

a) GUIDELINE: FRAMEWORK FOR RFP ACTIVITIES

a.1) RFP activities are governed by guidelines established in the Federal Acquisition Regulations (FAR) and in the Education Department General Administrative Regulations (EDGAR). The Grants and Contracts Service (GCS) in the Office of Human Resources and Administration (OHRA), Department of Education is responsible for the acquisition process for NCES and can provide expertise and guidance in the development of the RFP.

a.2) Within NCES, a staff member will be designated to develop a stateof work and related documents and will most likely also be designated the CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE (COTR). The individual designated as COTR is to be included in the development process, to provide familiarity with the contractual requirements and expectations. The COTR of the contract is responsible for (1) monitoring technical performance of the contractor, and (2) providing technical advice and recommendations to both the contractor and the Contract's Officer (CO).

GUIDANCE: II-01-92

b) GUIDELINE: MAJOR COMPONENTS IN THE RFP PROCESS

1. STATEMENT OF WORK (SOW)
2. PROCUREMENT ACTION REQUEST (PAR)
3. INDEPENDENT GOVERNMENT COST ESTIMATE (IGCE)
4. PROPOSAL EVALUATION PLAN
5. PROPOSAL PREPARATION INSTRUCTIONS PACKAGE
6. DEPARTMENT CLEARANCES

b.1) Prepare a STATEMENT OF WORK (SOW)

Purpose: To provide a clear, precise, and accurate description of the requirement for the work and the expected activities, services, products, and level of effort to be delivered under the contract.

Contents: The SOW will contain technical, managerial, and product specifications. The technical specifications will provide the offerer with a statement of statistical, temporal, resource, and format parameters of all phases of design, implementation, and analysis. Managerial specifications will be written as specific activities and tasks, delineating those to be performed by the contractor and those to be performed by NCES. The products (e.g., analysis plans, final reports) will be termed deliverables and each deliverable will have a time-line schedule.

Source for contents: The Initial Planning Document, and all subsequent design, testing, statistical evaluation, and implementation information.

b.2) PROCUREMENT ACTION REQUEST (PAR)

Purpose: To obtain a funding commitment from the appropriate NCES budgetary sources for the survey's contractual obligation.

Contents: Funding request and justification for funding.

Source for contents: Office of the Commissioner, NCES. Also see samples from Contract Archives.

b.3) INDEPENDENT GOVERNMENT COST ESTIMATE (IGCE)

Purpose: To estimate the cost of the project in terms of labor categories (the contractor's manpower commitment), other related costs, and to express the expected level of effort.

Contents: Estimated costs for all phases and elements of the survey system for which the offerer will be responsible for providing the labor and materials. (Total estimated cost is to equal NCES budget amounts.)

Source for contents: SF60 and previous comparable project estimates in Contract Archives.

b.4) PROPOSAL EVALUATION PLAN

Purpose: Provides the criteria on which the COTR and the Technical Evaluation Panel (TEP), who act as advisors to the Contracting Officer, assess the proposals.

NOTE: THIS PLAN IS THE FOUNDATION FOR ALL AWARD DELIBERATIONS ON ALL PROPOSALS RECEIVED. IT SPECIFIES THE MEMBERSHIP OF THE TEP AND WHAT QUESTIONS WILL BE CONSIDERED IN RECOMMENDING THE AWARD OF CONTRACT.

Contents: Only criteria published in the RFP may be used to evaluate proposals submitted in response to it. Listed are those factors (e.g., technical competence, analysis plan, familiarity with data files, management plan, etc.) the Project Officer/COTR, with the approval of the CO, determines essential for evaluation. The number of criteria and the weights ascribed to each of the criteria are determined by the COTR.

Source for Contents: The Initial Planning Document, other projects of comparable size and scope, and samples from the Contract Archives.

b.5) PROPOSAL PREPARATION INSTRUCTIONS PACKAGE

Purpose: This tells the offerer the substantive, format, and organizational requirements for delivering the proposal.

Contents: The offerer will submit two separate proposals: (1) technical and (2) business. They are evaluated separately.

Source of Contents: For the technical proposal, the Initial Planning Document and related technical and managerial concerns. For the business proposal, level of effort and length of contract period.

b.6) See ACS Departmental Directive, C:GPA:2-105, Acquisition Planning

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SUBJECT: GUIDANCE FOR MONITORING AND DOCUMENTING SURVEY CONTRACTS.

EFFECTIVE DATE: 1/1/92 **NCES GUIDANCE: II-02-92**

PURPOSE: To ensure that contract progress and completion of NCES surveys are performed in compliance with all Federal and Department of Education regulations and in compliance with all terms and conditions of the contract, and that a record of the contractual activities is available.

a) GUIDELINE: FRAMEWORK FOR MONITORING AND DOCUMENTING THE CONTRACT

a.1) Monitoring the contract and monitoring the survey are two separate events (See Standard for Documenting a Survey System, V-02-92 and Standard for Managing Survey Operations, II-03-92). The nature of the contract will govern the extent of the monitoring required, but typically the Contracting Officer's Technical Representative (COTR) is to ensure that the contractor meets: (a) specifications, (b) schedules, (c) NCES standards, (d) performance cost controls, and (e) the beneficial effort/method of performance criteria in fulfilling the contract. Education Department Directive C:GPA:2-110 dated 1/12/87 established the Standards and Guidelines for the Monitoring of Contracts. Key elements are outlined below.

a.2) Documenting the survey contract means maintaining up-to-date records of contractual activities and deliberations resulting in changes to the contract or to the survey. The documentation file is subject to NCES audit.

b) **GUIDELINE:** MAJOR MONITORING AND DOCUMENTING ACTIVITIES FOR THE COTR

1. PROGRESS REPORTS
2. IDENTIFICATION OF POTENTIAL OR ACTUAL PROBLEMS
3. REVIEW VOUCHERS
4. REVIEW DELIVERABLES
5. REVIEW CONTRACTOR PERSONNEL CHANGES
6. ADHERENCE TO SCHEDULES

7. CONTRACTS ARCHIVE
8. RECORD SCOPE OF WORK CHANGES
9. RECORD LATE AND UNACCEPTABLE DELIVERABLES

b.1) PROGRESS REPORTS

According to the conditions established in the contract, the contractor will submit periodic (usually monthly) progress reports to the Contracting Officer (CO). The COTR is to review and verify the report and recommend acceptance to the CO.

b.2) PROBLEM IDENTIFICATION AND RESOLUTION

The CO and NCES management are to be advised by the COTR of any problem that would substantially affect the successful completion of the survey or alter the terms and conditions of the contract (e.g., cost or time increases, quality decreases). The COTR is expected to offer options and recommend, if possible, a solution to the problem.

b.3) RECOMMEND ACCEPTANCE OF VOUCHERS

The contractor will forward vouchers for payment to the CO. The COTR is to review the vouchers, verify the claimed costs, and recommend acceptance to the CO.

b.4) REVIEW DELIVERABLES

The COTR is to review the draft deliverables (with revision by the Contractor, if required) for accuracy and completeness (compliance with the conditions of the contract). The COTR recommends acceptance of the deliverables to the CO.

b.5) CHANGES IN CONTRACTOR PERSONNEL

If the contractor should make changes in key personnel (as defined in the contract document), the COTR is to recommend to the CO approval or disapproval of the proposed change.

b.6) ADHERENCE TO SCHEDULES

For all contract and survey activities, the COTR is to monitor the timeliness of any scheduled event, note delays, recommend to the CO acceptance of

any substantive schedule changes, and notify NCES management of expected or actual delays.

b.7 FORWARD CONTRACT FILE TO CONTRACTS ARCHIVE

Upon completion and/or termination of the contract, the COTR will forward to the NCES Contracts Archive those items specified in the Standard for Documenting a Survey System, V-02-92 and Standard for Survey Documentation in Center Reports, V-03-92.

b.8 RECORD ALL SCOPE OF WORK CHANGES

The COTR should review and immediately submit all scope of work change requests to the Contracts' Officer for review and decision. The COTR should place a copy of the signed formal contract change statement in the contract file.

b.9 RECORD LATE AND UNACCEPTABLE DELIVERABLES

The COTR should keep accurate and complete records of contractor performance. Specifically, all late and unacceptable deliverables should be recorded and made part of the contract file. Furthermore, actions taken by the COTR or CO to remedy the problem should be documented.

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SUBJECT: STANDARD FOR MANAGING SURVEY OPERATIONS

EFFECTIVE DATE: 1/1/92 **NCES STANDARD: II-03-92**

PURPOSE: Surveys and analyses by contract conducted by or for NCES must meet specifications for data collection, editing, tabulations, and quality control procedures.

STANDARD: All phases of a survey operation must be managed in a manner which allows the NCES COTR to evaluate progress towards objectives. Problems must be identified, evaluated, and resolved as quickly as possible to keep survey operations on target and within scope of the work plans.

PROCEDURES: To meet this standard requires strict adherence to project objectives, milestones, specifications, and contractual requirements.

GUIDELINES: If the contractual documents or agreement fail to include survey management procedures then the following guidelines should provide some guidance:

a) GUIDELINE: Survey response rates should be monitored closely. NCES COTRs should have the ability to access, retrieve and analyze the monitoring system information to ensure conformance with requirements and to independently determine response rates.

b) GUIDELINE: Monthly progress reports (which should contain accomplishments for the prior month plus planned work for the current and upcoming month) should be carefully evaluated by the COTR to ensure that planned work activities were performed /completed as anticipated and that costs are within budget.

c) GUIDELINE: In some instances, requests for additional or modified work procedures may be construed as "out-of-scope" requests if they have unanticipated situations, such as lower than expected response rates, more intense editing or followup requirements, key staff resignations or a simple lack of personnel, should be detailed in writing by the data collection organization and/or the COTR. The document should contain: a) a statement of the problem, reasons for the situation, and proposed steps to resolve the issue; b) an analysis of any statistical implications for survey results; and c) any contractual implications

such as costs, changed dates for contract deliverables and any other factors which may be pertinent for negotiations. This document should be placed in the survey project files.

d) GUIDELINE: NCES COTRs should review/accept/reject project deliverables in writing within the time frames stated in the agreement or contract.

e) GUIDELINE: Monthly progress reports (in writing or verbally) should be given to the COTR and the COTR's immediate supervisor or manager. Such reports will include an analysis of progress, potential problems and any proposed solutions. (Note: During data collection, weekly status reports indicating current and cumulative yields are recommended)

f) GUIDELINE: In some instances, the data collection organization will request technical redirection for unanticipated problems. Such requests might be made verbally or in writing and outline the issue(s) and potential options. The COTR will use this information in discussions with other NCES personnel in determining the appropriate course of action. Whatever course of action is taken, it should be documented and placed in the project files.

ADDITIONAL GUIDELINES

The extent of survey management procedures will vary by the size of operations and other unique requirements of each project. In general, larger projects require more extensive management controls. The statement of work should provide for the presence of relevant control systems. Listed below are some options which should be considered when evaluating how to meet the standards and procedures described above.

1. The status of each survey respondent at each stage of the survey process should be kept current. Critical status events include, but are not limited to, dates of questionnaire mailout, returns, deletions (out-of-scopes), scan editing, data entry, machine editing, callback(s), and addition to the final data files. The status of survey respondents is normally best handled by a computerized status monitoring system. Whatever system is selected, the COTR should request direct and rapid access to the information.

   Note: For recurring surveys, it may be appropriate for the Center to supply the data collection organization with an NCES developed status monitoring system and train them on usage. This could avoid unnecessary software development across the Center's surveys.

2. Soon after initial startup of field operations, and less frequently thereafter, NCES COTR(s) should evaluate the quality of survey operations by comparing a sample of the original returned questionnaires with the edited information on the data file to a) ensure that editing/update procedures are being correctly implemented and b) to learn of any problems with reporting or questionnaire design.

3. On an as-needed basis, contract monitors may have a "snapshot" taken (or request a copy) of fully edited records from the current master file and analyze the information for conformance to contract requirements and deliverables. The extent of the statistical analysis of a "snapshot" data base will vary with survey objectives for descriptive analysis. Listed below are some of the possibilities that should be considered.

    a. For recurring surveys from the same population, an analysis might include a check for comparing current year data with prior year responses (or other existing data sources) to analyze data quality. This will help ensure the validity of on-going time series prior to final delivery of the master data files.

    b. In all cases, simple crosstabulations and frequencies of discrete variables will normally point out internal coding inconsistencies and also provide item response rates.

    c. Simple descriptive statistics for continuous variables will provide item response rates, measures of dispersion, and outliers.

4. The organization's data collection management and work plans should be analyzed periodically to determine that contracted work is being performed as expected and within the negotiated time frames.

5. NCES COTRs might independently develop appropriate computer programs to analyze and accept/reject data tape deliverables. In cases where the deliverable is a plan or other product (sampling plan, training guide, final report, etc.), the deliverable should come on diskette using NCES approved microcomputer packages.

6. The COTR(s) should assure that software developed for weighting, imputations, and variance estimates is accurate. This may be done through a series of "checkpoints" imbedded within the program(s). Another alternative is to have the contractor develop the software in a series of discrete steps with appropriate printouts produced and reviewed by the COTR along the way.

7. The techniques listed above are a subset of an overall quality assurance program for each project. Additional components of the program may include measures of statistical control that ought to be imposed throughout the survey management process. These measures might include such items as edit failure rates by item, response rates by sample stratum, etc. to identify and reduce errors as soon as possible.

8. Constructing a well-conceived survey management plan is merely the beginning of the project. As soon as the survey gets underway, you will find that tasks (NOT deliverables) don't necessarily stick to schedule and something requires changing. Consequently, survey management requires the COTR and data collection organization to analyze the impact of changing requirements on project timelines, personnel requirements and costs. This is particularly true when the survey has a great deal of task interdependencies and potential over allocations of personnel time. Project management packages can provide measures for such events and offer the ability to analyze potential options.

9. Specify that all programs be self-documenting. This means that the programmer should insert "comments" within the program(s) to describe each discrete section of code.

10. Complicated processes should be programmed as a series of discrete, simple steps. This will provide you with "checkpoints" for tracing errors. This will help you trace when the error(s) may have occurred.

11. Relationships between programs and files should be flowcharted or described in a separate document. This includes record layouts and file structures.

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SUBJECT: STANDARD FOR ACHIEVING ACCEPTABLE SURVEY RESPONSE RATES

EFFECTIVE DATE: 1/1/92 **NCES STANDARD: II-04-92**

PURPOSE: High survey response rates in relationship to the initial plan help to ensure that survey results are representative of the target population. Surveys conducted by or for the NCES need to be conducted in a manner which encourages high rates of response among the selected sample.

DEFINITION: Survey nonresponse occurs when a respondent fails entirely to respond to/fill out/return a data collection instrument. It is, in effect, complete item nonresponse from that sample unit.

To meet this purpose the following standards must be met:

STANDARD 1: The data collection, independent of collection methodology (e.g. whether mailed or interviewer administered, in person or by telephone) must be designed and administered in a manner which encourages respondents to participate. The following are guidelines to encourage participation:

a) GUIDELINE: Adequate explanation of need for data, and if possible, examples of uses of the data in the past which benefit the respondent. These materials should be mailed to respondent in advance of survey if interviewer administered, otherwise they should be mailed with the survey instrument.

b) GUIDELINE: Confirmation of confidentiality of responses.

c) GUIDELINE: Interviewer training should emphasize techniques for obtaining respondent cooperation - manner, follow-up skills, and knowledgeability - appropriate timing.

d) GUIDELINE: In keeping with the goals of the particular data collection effort, respondent burden should be minimized. Questions in surveys should be clear, brief and unequivocal. Avoid open-ended, double-barreled, leading or loaded questions. Skip patterns, if absolutely necessary, should be simple for interviewers to administer and respondents to follow.

e) GUIDELINE: Prior to conducting a survey, one should, as appropriate, obtain support and active cooperation of influential groups, i.e. student government for students, administrative units for schools, influential education community leaders, professional organizations.

STANDARD 2: All surveys require some follow-up to achieve desirable response rates. Therefore, a strategy for achieving acceptable response rates needs to be planned and included in the RFP or contract. While the strategy will vary from survey to survey, it should conform to the following guidelines:

a) GUIDELINE: Survey procedures need to be established which provide for timely monitoring of responses-to-date. This allows for a follow-up that can commence shortly after the survey begins.

b) GUIDELINE: Obtain as much locating information about respondents as possible during initial sampling ie., for a student, school address and home address, name of advisor, phone numbers of parents.

c) GUIDELINE: Anticipate if response rates which are low after the initial phases of data collection and if further data collection on the full sample is deemed too costly, be prepared to take a subsample of nonrespondents and utilize a more intensive data collection method. This will permit a description of nonrespondents' characteristics and allow imputation for missing characteristics if desired.

d) GUIDELINE: Determine a set of core or key data items to obtain when a respondent is unwilling to fully cooperate. These variables may then be targeted in follow-up so that imputation is based upon some respondent characteristics. It also enables an evaluation of characteristics of non-respondents vs. respondents.

RELATED STANDARDS:

- o Standard for Initial Planning of Statistical Surveys, I-01-92
- o Standard for the Design of a Survey, I-02-92
- o Standard for Managing Survey Operations, II-03-92
- o Standard for Evaluation of Surveys, V-01-92
- o Standard for Documenting A Survey System, V-02-92

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SUBJECT: STANDARD FOR IMPUTATION OF ITEM NONRESPONSE

EFFECTIVE DATE: 1/1/92 **NCES STANDARD: III-01-92**

PURPOSE: To ensure that there is adequate planning for NCES key item imputation in sample surveys and in censuses, that appropriate imputation procedures are used, and that these procedures are tested and found to be valid and to yield consistent estimates.

To achieve this purpose the following standards must be met:

STANDARD 1: For all new surveys and new data collections of ongoing surveys, a set of NCES key items must be identified during the planning phase, and all appropriate missing data imputed for these items. Key items include all items for which aggregate estimates are to be published by NCES.

> **a) GUIDELINE**: Missing data for all key items should be imputed in all surveys, ongoing as well as new (except for items for which the response rate is too low to permit estimation and analysis).

STANDARD 2: Imputation procedures must be internally consistent, must be based on theoretical and empirical considerations, and must make use of the most relevant data available.

> **a) GUIDELINE**: There should be empirical evidence that imputation procedures have produced desirable results, e.g., unbiased estimates for simple means and totals under the assumption that nonrespondents are similar to respondents, maintenance of covariance structures, etc.

STANDARD 3: Published estimates based on incomplete data for which there has been no imputation must note this fact, and must be accompanied by a statement indicating the proportion of missing data when possible.

STANDARD 4: All Imputed values on a data file must be clearly identified as such.

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SUBJECT: STANDARD FOR COMPUTATION OF RESPONSE RATES

EFFECTIVE DATE: 1/1/92 **NCES STANDARD: III-02-92**

PURPOSE:To ensure that the computation of response rates is consistent across NCES surveys.

To meet this purpose the following standards need to be met:

STANDARD 1: Response rates for sample surveys are to be calculated on weighted data (using the sample base weights); and response rates for censuses or universes are based on unweighted data (or, equivalently, where the weights all equal one). When the sampling unit is not the unit of analysis, it is appropriate to multiply the sampling weight of the sampling unit by the sampling weight of the unit of analysis. For example, we may sample institutions, but be interested in estimates that are functions of the number of students enrolled. Then we would multiply the sample weight of the institution by the sampling weight of the students enrolled. This concept could also apply to a census.

STANDARD 2: Overall effective response rates (Ro) are to be calculated as the ratio of the number of completed interviews to the number of sample respondents drawn minus respondents considered to be out-of-scope. As an example, in a household interview, this would be the number of units sampled minus the number of vacant units, condemned units, or units converted from residential to business use. "Unable-to-contact" sample units must be subsampled if it is unknown whether the units are in-scope or out-of-scope and if they represent a significant proportion of the initial sample. If the unable-to-contact sample unit is known to be in-scope but doesn't respond, the unit is classified as a noninterview. For unable-to contact units for which it is unknown whether they are in-scope or out-of-scope, a portion of them can be considered out-of-scope (the ratio of the # of the weighted known out-of-scopes to the weighted # of units sampled less the weighted # of unable-to-contacts) for the purpose of calculating Ro.

$$Ro = \frac{\text{weighted \# of completed interviews}}{\text{weighted \# of units sampled - weighted \# out-of-scope units}}$$

STANDARD III-02-92

STANDARD 3: Item response rates (Ri) are to be calculated as the ratio of the number of respondents for which an in-scope response was obtained to the number of completed interviews for which the question (or questions if a composite variable) was intended to be asked.

$$Ri = \frac{\text{weighted \# of respondents with in-scope response}}{\text{weighted \# of completed interviews for which question intended}}$$

PRODUCT: None

RELATED STANDARDS:

- o NCES Standard for Initial Planning of Statistical Surveys, I-01-92
- o NCES Standard for Testing Survey Systems, I-03-92
- o NCES Standard for Managing Survey Operations, II-03-92
- o NCES Standard for Survey Documentation in Center Reports, V-03-92

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SUBJECT: STANDARDS FOR CODES, ABBREVIATIONS, AND ACRONYMS

EFFECTIVE DATE: 1/1/92 **NCES STANDARD: III-03-92**

PURPOSE: To provide uniform codes, abbreviations and acronyms for use in NCES data collection and processing in order to facilitate the exchange of information and to ensure uniformity in NCES data releases. This standard requires adherence to the following procedures:

a) STANDARD 1: The following Federal Information Processing Guidelines (FIPS PUBS)
will be used in all NCES data releases:

FIPS PUB NUMBERS

- 5-2 States and Outlying Areas of the U.S.
- 6-3 County and County Equivalent of the States of the U.S. and D.C.
- 8-5 Metropolitan Statistical Areas
- 9 Congressional Districts of the U.S.
- 66 Standard Industrial Classification Codes (SIC)
- 92 Standard Occupational Codes (SOC)

b) STANDARD 2: OMB standardS for reporting race and ethnicity will be followed unless an alternative is justified as part of the OMB survey clearance submission.

c) STANDARD 3: Where appropriate, the OERI Publication Guide must be utilized.

d) STANDARD 4: Official national, State and international abbreviations are listed on pages 135-153 of the Style Manual, March 1984 edition, of the U.S. Government Printing Office. These abbreviations shall be used where appropriate in NCES publications.

RELATED STANDARDS/GUIDELINES (*)

- o NCES Standard for Initial Planning of Statistical Surveys, I-01-92
- o NCES Guidance for Developing a Request for Proposal for Surveys, II-01-92

STANDARD III-03-92

- o NCES Standard for Documenting a Survey System, V-02-92
- o NCES Standard for Survey Documentation in Center Reports, V-03-92

(*) SSMD will maintain a current copy of all references.

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SUBJECT: STANDARD FOR VARIANCE ESTIMATION

EFFECTIVE DATE: 1/1/92 **NCES STANDARD: III-04-92**

PURPOSE: To ensure that there is adequate planning for estimation and variance estimation procedures to be used in sample surveys, that appropriate procedures are used, and that these procedures are documented.

To achieve this purpose the following standards must be met:

STANDARD 1: Variance estimates shall be obtained for all key variables for which primary estimates will be presented.

STANDARD 2: Variance estimators will be based on theoretical and empirical considerations related to the sample design.

> **a) GUIDELINE:** Estimation should, where possible, make use of other data from the survey, from prior surveys, or from administrative records or censuses.
>
> **b) GUIDELINE:** Ratio or regression estimators should be used if they provide some reduction in variance without substantially complicating subsequent analyses.

STANDARD 3: Variance estimators need to be designed to minimize the mean squared error of the resulting estimates.

> **a) GUIDELINE**: Taylor Series, Jackknife estimators and balanced repeated replication should generally be considered superior to random groups estimators because of their greater stability in most cases.

STANDARD 4: When replication methods are used to produce variance estimates, the number of replicates should be justified if that number is less than thirty because of the concern for the stability of the variance estimate.

STANDARD: III-04-92

STANDARD 5: Subject to confidentiality constraints, the data file resulting from full-scale data collection will contain all the information needed for estimation and variance estimation, e.g., weights, PSU codes, replicates.

ADDITIONAL GUIDELINES:

> **GUIDELINE:** If a large number of statistics are being estimated and presented, consideration should be given to modelling variances and presenting the summary form of the model.

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SUBJECT: STANDARD FOR ANALYSIS AND STATISTICAL COMPARISONS

EFFECTIVE DATE: 1/1/92 **NCES STANDARD: III-05-92**

PURPOSE: To ensure that comparisons, conclusions and inferences cited in descriptive reports are based on appropriate statistical procedures.

To achieve the purpose the following standards need to be met:

STANDARD 1: The analysis of an item shall be contingent on achieving an acceptable level of "response" in the survey. The measure of "total nonresponse" must include both survey nonresponse as well as item nonresponse.

a) GUIDELINE: A reasonable measure of "total nonresponse" is :

total nonresponse = (1 - survey response rate * item response rate).

b) GUIDELINE: This measure should not exceed .30 for any analyzed variable unless the representativeness of the sample is evaluated by a non-response bias study.

c) GUIDELINE: If the measure is unacceptable for the whole survey but is acceptable for a given stratum or analytic sub-universe, analysis of the variable at these levels may be done.

STANDARD 2: When estimates are compared to one another in descriptive reports, the conclusions stated in the text are to be supported by hypothesis tests. The level of significance (alpha) shall be .05.

a) GUIDELINE: Exclusive reliance on t-tests should be avoided when other simple procedures, such as chi square analysis or analysis of variance, are appropriate.

b) GUIDELINE: When a chi square analysis or an analysis of variance does not show a statistically significant overall difference among categories, it is inappropriate to t-test individual differences for pairs of categories.

STANDARD: III-05-91

STANDARD 3: Hypothesis tests shall incorporate the design effects associated with the estimates being tested.

a) GUIDELINE: A permissible (although not necessarily preferred) way to incorporate design effects into chi square analysis and analysis of variance is to reduce effective sample sizes.

STANDARD 4: When t-tests are used to compare means or proportions, multiple testing needs to be combined into sets, based on the nature of the conclusions to be drawn, and a Bonferroni (or similar) correction for multiple testing need to be incorporated. Multiple comparison procedures include Bonferroni, Scheffe, and Tukey tests.

STANDARD 5: Multiple comparison procedures are to be used to control the level of type I error for simultaneous inferences.

a) GUIDELINE: In analyses involving multiple variables, factors, or levels, an overall F or chi-square test of significance needs to be performed to determine which variables or factors are significant before conducting multiple comparisons. The overall test of significance could be from an analysis of variance, a two-way contingency table, or the test of a loglinear model in the case of higher dimensional tables of categorical data. When multiple comparisons are used, the number of comparisons and the overall type I error rate should be given for each simultaneous inference.

b) GUIDELINE: The number of "simple" comparisons in a bulletin or report should be minimized in order to reduce the probability of a spurious significant difference, or type I error. A "simple" comparison is defined as a t-test, chi-square test, or any other test that examines a simple hypothesis such as the difference between two means or proportions.

c) GUIDELINE: Consideration should be given to use of multivariate techniques such as regression and log-linear models in analyses involving multivariable data. Multivariable data refer to several variables measured on each sample unit.

STANDARD 6: When across-the-board t-testing is conducted, two-sided t-tests are to be used.

STANDARD: III-05-91

ADDITIONAL GUIDELINE:

GUIDELINE: The above standards apply primarily to across-the board testing of differences. When a small number of differences are selected for testing, based on a priori considerations, it may not be necessary to use corrections for multiple testing, to use chi square analysis or analysis of variance prior to t-testing, or to use two-sided t-tests.

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SUBJECT: STANDARD FOR MAINTAINING CONFIDENTIALITY

EFFECTIVE DATE: 1/1/92 **NCES STANDARD: IV-01-92**

PURPOSE: To protect the confidentiality of NCES data that are individually identifiable.

STANDARD: Staff will be informed about the requirements of the law and will monitor the confidentiality of individually identifiable information in their daily activities and in the release of information to the public.

LEGAL REQUIREMENTS:
Protection of the confidentiality of individually identifiable information collected by NCES is covered by two laws. One is the Privacy Act of 1974 and the other is the 1988 Hawkins-Stafford amendments of the GEPA (PL 100-297). However, a recent technical amendment to GEPA has exempted NPSAS and certain other longitudinal studies from the Hawkins-Stafford Amendments. These exempted survey studies are still subject to the requirements of the Privacy Act of 1974. Individual information means any information about an individual. Therefore, a principal providing information about himself or subjective information about the school is an example of individual information, while a principal providing objective information about his school is not.

Privacy Act of 1974--When individual records are indexed in any fashion subject to the provisions of the Privacy Act, they constitute a system of records. NCES has developed two types of systems of records: one for its surveys that maintain individually identifiable data and one for affidavits of nondisclosure.

Program managers and system managers have legal responsibilities relating to the Privacy Act of 1974 to maintain these systems of records. These requirements are defined in an ED Privacy Directive dated 12/28/88 .

PL 100-297 (Stafford-Hawkins)--This law requires, except for (i) the survey required under section 1303(c) of the Higher Education Amendments of 1986; or (ii) certain longitudinal studies concerning access, choice, persistence progress, or attainment in postsecondary education, that no person may:

(i) use any individually identifiable information furnished under the provisions of this section for any purpose other than statistical purposes for which it is supplied,
(ii) make any publication whereby the data furnished by any particular person under this

section can be identified; or
(iii) permit anyone other than the individuals authorized by the Commissioner to examine the individual reports. Further, individually identifiable information is immune from legal process, and shall not, without the consent of the individual concerned, be admitted as evidence or be used for any purpose in any action, suit, or other judicial or administrative proceeding. Employees, including temporary employees, or other persons who have sworn to observe the limitations imposed by this law, who knowingly publish or communicate any individually identifiable information will be subject to fines of up to $250,000, or up to 5 years in prison, or both.

PROCEDURES: In order to maintain confidentiality for NCES data collections, the following conditions must be met.

1. As required by the Office of Management and Budget, respondents must be told whether or not participation in the survey is voluntary and about the legislative or executive mandate for the survey.

2. Respondents must be told in a cover letter or in instructions that all responses that relate to or describe identifiable characteristics of individuals (or, in the special case of NAEP, schools since the legislation for NAEP treats NAEP sample schools as individuals) will be kept confidential. Furthermore, the routine statistical purposes for which the data may be shared must be explained. Respondents whose data cannot be kept confidential must be given similar information such as: the purpose of the survey, whether it's voluntary or not, the legislative or executive mandate, routine uses, and the extent to which, if any, responses will be kept confidential.

3. All NCES staff, without exception, have pledged not to release, for any purpose, to any person not sworn to the preservation of confidentiality, any individually identifiable data. Individually identifiable data are confidential and protected from legal process unless the individual provides written consent.

4. All contractors whose activities might involve contact with individually identifiable data shall provide NCES Project Officers with a list of all staff who might have contact with such data, together with a certificate to the effect that all such staff have taken an appropriate oath of confidentiality (a notarized copy of each affidavit of nondisclosure must be attached). These oaths will be kept current as new staff are assigned to NCES projects with individually identifiable information.

5. At the discretion of the Commissioner of NCES, staff may release individually identifiable information to persons for statistical uses compatible with the purposes for which the data were collected if those persons sign oaths of

confidentiality and meet such other requirements as deemed necessary in accordance with other confidentiality provisions of the law.

6. In reporting on surveys and preparing public use data tapes, the goal is to have an acceptably low probability of identifying individual respondents.

   a. For reports, this means that each publication cell must have at least three (unweighted) observations in it and subsequent tabulations (e.g. crosstabulations) must not provide additional information which would disclose individual identities.

   b. For public use data tapes, one must consider any variables proposed for inclusion on the tape that are unusual (such as very high salaries) and data sources that may be available in the public or private sector for matching purposes. Details on this topic are provided in Policies and Procedures for Public Release of Data.

7. In preparing tapes for release to the public, the tapes must undergo a disclosure analysis. (In designing and conducting this analysis, staff must consult the Disclosure Review Board (DRB) for guidance at an early stage.) Any modifications that are necessary as a result of the analysis must be made, and the entire process must be documented. The proposed final tape and documentation of the disclosure analysis will be reviewed by the DRB. The DRB will make a recommendation to the Commissioner of NCES about its release. In making its recommendation, the DRB will take into consideration information such as resources needed in order to disclose individually identifiable information, age of the data, accessibility of external files, detail and specificity of the data, and reliability and completeness of any external files.

8. Both NCES staff and contractors must employ methods in data collection and analysis that protect the confidentiality of individually identifiable information. Among other things, this means that data tapes, questionnaires, and other reports having individual data must be kept secure at all times through the use of passwords, physical separation of individual identity from the rest of the data, and secure data handling and storage.

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OFFICE OF EDUCATIONAL RESEARCH AND IMPROVEMENT
U.S. DEPARTMENT OF EDUCATION

SUBJECT: STANDARD FOR TABULAR AND GRAPHICAL PRESENTATIONS

EFFECTIVE DATE: 1/1/92_____ **NCES STANDARD: IV-02-92**

PURPOSE: To ensure that tables and graphs used in NCES publications display data in such a way that readers can conveniently evaluate the accuracy of the results presented. To ensure consistent and accurate results from calculations. The problem of implying a spurious degree of accuracy must be balanced with the need to have consistency between and within tables.

To achieve this purpose the following standards must be met:

STANDARD 1: All tables and graphs must have a short title concisely stating the subject of the table, dated, and must be able to stand alone.

STANDARD 2: All summary U.S. tables and graphs must present data representing the 50 States and the District of Columbia, if compatible. Data for the outlying areas are to be excluded unless separate totals are shown.

STANDARD 3: For all variables used in a table, the categories must be labeled along with the names of the variables.

Additional Guidance:

- o All tables must have row and column totals.
- o For tables of percentages or rates, the population must be presented in the table when possible.

STANDARD 4: All tables and graphs must have source notes. When the data presented in a table or graph come from multiple sources or come from a source which is not the direct subject of the report, the source note must clearly match the data items with the source.

STANDARD 5: Standard errors (se's) or confidence intervals (CI's) on statistics in tables can be handled in two ways. For publications that are targeted to general audiences, a separate table of standard errors on key statistics may be presented in the technical appendix. The second method for more technical publications is to include se's or ci's in the table being presented, either in a separate subsection of the table or

in columns accompanying the statistics being presented.

STANDARD 6: Before rounding figures for publication, a decision must be made about the appropriate number of significant digits added after the decimal point.

STANDARD 7: When adding, multiplying, or dividing figures that have been rounded to different significant digits, the product can only be stated in terms of the number with the fewest significant digits.

STANDARD 8: Tabulations to produce summary data and computations performed for purposes of estimating standard errors must be done on unrounded numbers when available.

STANDARD 9: Sums of column (row) figures in a table must be derived using unrounded figures, with appropriate rounding of the total after its derivation. To handle the problem of column (row) figures not summing to a rounded total, an explanatory footnote must be used. For example, "Because of rounding, details may not add to totals."

STANDARD 10: The final rounded value must be obtained from the original figure available, not from a series of roundings (e.g. 7.1748 can be 7.175 or 7.17 or 7.2 or 7 but not 7.18). This situation typically arises when researchers round percentages from tables in tenths of a percent to full percents to be used in text.

STANDARD 11: Percentages must generally be rounded to no more than one decimal place.

STANDARD 12: Specific rules to be used for rounding: If the digit to be dropped is less than 5, the last retained digit is not changed.

6.1273 6.127

If the digit to be dropped is greater than 5, the last digit retained is increased by 1.

6.688 6.69

If the digit to be dropped is equal to 5, make no changes in the preceding digit if it is even and increase it by 1 if it is odd.

6.845 6.84

6.875 6.88

STANDARD IV-02-92

STANDARD 13: Documents need footnotes explaining cases where actual numbers are used in all calculations, and rounded results are presented which seem inconsistent.

RELATED STANDARDS:

- o NCES Standard for Dissemination of Survey Data and Reports, IV-03-92
- o NCES Standard for Variance Estimation, III-04-92

RELATED CHECKLISTS, FORMS, AND DOCUMENTS:

- o Guidelines for Use of Graphics (Below)
- o NCES Guidelines for Tabular Presentation
- o James Filliben and David DesJardins, the Graphic Analysis and Display of Statistical Data, Washington Statistical Society, 1986.
- o Calvin F. Schmid and Stanton E. Schmid, Handbook of Graphic Presentation, 1979
- o Edward R. Tufte, The Visual Display of Quantitative Information, Graphics Press, 1983.
- o OERI Publication Guide published in 1990.

Additional Guidance for Use of Graphics

a) Simplicity is critical; cluttered graphs are ineffective. Generally no more than 7 segments in a pie graph.

b) When using time-series data, horizontal axis intervals should be equal to time intervals. Time scales should be linear.

c) Ordinarily, the vertical scale should start at zero. Otherwise, scale breaks should be clearly visible.

d) Bar charts should not be used for showing changes over time unless only two or at most three points are being compared.

e) Stacked bar graphs, stacked area line graphs, and histograms are hard to read and easily misinterpreted and should be avoided in most situations.

f) All axes should be clearly labeled.

g) The use of multiple pie charts to compare similar items is generally inappropriate because of the difficulty in comparing the relative sizes of wedges.

h) Labels should be placed on the tick marks for axes.

i) When using black and white maps, area data should contain only one variable and no more than 5, preferably 3, levels of distinction.

NATIONAL CENTER FOR EDUCATION STATISTICS
OFFICE OF EDUCATIONAL RESEARCH AND IMPROVEMENT
U.S. DEPARTMENT OF EDUCATION

SUBJECT: STANDARD FOR DISSEMINATION OF SURVEY DATA AND REPORTS

EFFECTIVE DATE: 1/1/92 **NCES STANDARD: IV-03-92**

PURPOSE: To ensure comprehensive, appropriate, and predictable dissemination of survey data and reports to the public.

STANDARD: Survey data and reports must be disseminated according to a written plan which addresses both dissemination of machine-readable data for secondary analysis and dissemination of NCES and contractor reports based on survey data.

a). The dissemination plan must be developed in consultation with the office of the Commissioner for each survey during the initial survey planning process. The size and detail of this plan will vary with the size and complexity of the survey, but the plan must address both dissemination of machine-readable data for secondary analysis and dissemination of NCES and contractor reports based on survey data.

b).The dissemination plan must specify a process for dissemination of reports based on survey data. This section of the plan must address the types of NCES reports (e.g., E.D.Tabs, Survey, Analysis, and Technical Reports) that are proposed for preparation by NCES staff and contractors. The plan must describe the types of audiences targeted by each set of reports.

GUIDELINES: To meet this standard, the following guidelines should be followed:

a) GUIDELINE: Produce a one to two page descriptive brochure about the survey system in conjunction with the Outreach staff in IS. This brochure should describe the purpose of the survey, components of the survey, sample sizes, sample design, special features of the survey, and ordering information for data tapes and survey reports when available.

b) GUIDELINE: Plans for dissemination of reports should not be limited to NCES publications. Staff members are strongly encouraged to prepare presentations at professional meetings and papers for professional journals. The dissemination plan should include provisions for these types of activities.

STANDARD: IV-03-92

c) GUIDELINE: Dissemination of recurrent NCES publications (such as regular data series) should receive special consideration in the dissemination plan.

d) GUIDELINE: Dissemination of Machine-Readable Data for Secondary Analysis

The dissemination plan should address the following three aspects of public access: data access, conceptual access, and technical access.

1. Data access

   Raw data can be made available to the public in different formats, such as magnetic tape, CD-ROM, special extracts (on floppy disks or magnetic tape), and data base management systems. Each of these formats will enhance data access for different user groups. The dissemination plan should specify the data formats that are intended for release of survey data.

2. Conceptual access

   In order to encourage more widespread use of NCES data, conceptual access should be considered in the dissemination plan. Conceptual access addresses the needs of potential users of NCES data to understand its suitability for secondary analysis. Some potential users (a) may not be informed of the existence of NCES databases, (b) may not know enough about NCES data and its availability to understand its potential relevance to research questions of interest, or (c) may not have sufficient information about specific NCES database contents and survey design to determine its suitability for studying particular research questions or hypotheses. Therefore, the dissemination plan should include a section which proposes methods to disseminate widely among such potential users information about the content and structure of NCES databases, the sample design, the various formats in which the data are (or will be) available, and sources of the data.

   Examples of Methods of Conceptual Access:
   Descriptive brochures about the database
   Notices and/or articles in popular education journals such as Educational Researcher or Education Week

Presentations at professional meetings
Users meetings and seminars (general and topical)

3. Technical Access

Despite attaining conceptual access to NCES databases, some potential users of data for secondary analysis may not possess the technical skills and/or resources to use the data to its fullest potential. The dissemination plan should address appropriate methods to improve technical access, such as training sessions or individual consultation. Database documentation should contain the name and phone number of a contact person to aid users with technical questions and problems.

RELATED STANDARDS:

- o Standard for Initial Planning of Statistical Surveys, I-01-92
- o Standard for Maintaining Data Series, IV-05-92
- o Standard for Timely Processing and Release of Data and Data Tapes, IV-04-92

NATIONAL CENTER FOR EDUCATION STATISTICS
OFFICE OF EDUCATIONAL RESEARCH AND IMPROVEMENT
U.S. DEPARTMENT OF EDUCATION

SUBJECT: STANDARD FOR TIMELY PROCESSING AND RELEASE OF DATA AND DATA TAPES

EFFECTIVE DATE: 1/1/92 **NCES STANDARD: IV-04-92**

PURPOSE: To ensure that NCES data are released in a timely and predictable fashion.

STANDARD: Public-use data files, E.D.TABS and survey reports are to be released by the scheduled target dates specified in the publication planning document. The NCES publication process must be followed and documented on the publication sign off sheet. Prior to the release of a micro data file, a report presenting the key data contained on the file must be adjudicated and made available to the public.

GUIDELINE:

In order to set realistic time lines and to identify problem areas in the production process, a management information system should be established to collect and analyze data on the elapsed times between major steps in the publication process. Dates for the following milestones noted below should be included in the management information system.

PUBLIC USE DATA TAPES

1. Data collection completed
2. Clean data tape completed
3. Tape announcement and documentation to branch chief
4. Branch chief initial approval
5. Division director initial approval
6. Review by SSMD
6. OC approval
7. Tape available for sale in OERI/ Office of Deputy Assistant Secretary for Operations/ Publication Division.

E.D. TABS

1. Data collection completed

STANDARD: IV-04-92

2. Clean data tape completed
3. E.D.TABS to branch chief
4. Branch chief initial approval
5. Division director initial approval
6. Adjudication by SSMD
7. OC approval
8. Copies of E.D.TABS produced
9. E.D.TABS in distribution

SURVEY REPORTS

1. Data collection completed
2. Clean data tape completed
3. Branch chief initial approval
4. Division director initial approval
5. Adjudication meeting set (not date of adjudication meeting)
6. Adjudication meeting held (date of meeting)
7. Response to adjudication initially approved by branch chief
8. Response to adjudication initially approved by division director
9. Final OC approval
10. Editor assigned
11. Editor and author agree on editorial changes
12. Author prepares camera-ready copy and returns it to Publication Division
13. Copies of report are produced/printed
14. Report in distribution

NATIONAL CENTER FOR EDUCATION STATISTICS
OFFICE OF EDUCATIONAL RESEARCH AND IMPROVEMENT
U.S. DEPARTMENT OF EDUCATION

SUBJECT: STANDARD FOR MAINTAINING DATA SERIES

EFFECTIVE DATE: 1/1/92 **NCES STANDARD: IV-05-92**

PURPOSE: To maintain basic data series collected by the Center for continuing and periodic surveys by preserving the consistency of data over time. The goal is to have time series data for basic items that are published on a schedule so that the public will know when to expect these data series from year to year.

STANDARD: The Center must maintain and report on a consistent set of basic data series that may be analyzed over time. A plan detailing a list of basic data items that will be maintained as part of the survey along with the justification for their designation needs to be incorporated into the Initial Planning Document for review and comment by the OC. Decisions regarding those data series and definitions must be coordinated with the Data Development Division.

GUIDELINES: To meet this standard, the following guidelines should be used:

a) GUIDELINE: Planning for the maintenance of basic data series for recurring surveys should be done concurrently with the initial planning of the survey. In the Initial Planning Document, identify the basic data items needed to address policy issues and other information needs to be assessed on a regular basis.

b) GUIDELINE: Provisions should be made to maintain the same data items and survey procedures from survey to survey. These should include the use of consistent definitions for the data items and the same survey procedures, such as the method of data collection, data processing and tabulations, and the imputation of missing data.

c) GUIDELINE: If changes are needed in data items or survey procedures for data series, provide justification or rationale for the changes in terms of their usefulness for making policy, conducting analyses, and addressing other information needs. Also adjustment methods for these changes, such as crosswalks and bridge studies, should be provided so that trend analysis is possible.

d) GUIDELINE: To the extent practicable, estimates of change as well as level should be included in reports. For survey reports, consider publishing three or more years of the basic data along with the current year to highlight the time series.

e) GUIDELINE: In the appendix of the survey report, consider providing a list of other publications containing the data for previous years.

RELATED STANDARDS:

- o NCES Standard for Initial Planning of Statistical Surveys, I-01-92
- o NCES Standard for Dissemination of Survey Data and Reports, IV-03-92
- o NCES Standard for Machine Readable Products, IV-06-92
- o NCES Standard for Survey Documentation in Center Reports, V-03-92
- o NCES Standard for Maintaining Confidentiality, IV-01-92

NATIONAL CENTER FOR EDUCATION STATISTICS
OFFICE OF EDUCATIONAL RESEARCH AND IMPROVEMENT
U.S. DEPARTMENT OF EDUCATION

SUBJECT: STANDARD FOR MACHINE READABLE PRODUCTS

EFFECTIVE DATE: 1/1/92 **NCES STANDARD: IV-06-92**

PURPOSE: To ensure that data files created by NCES staff and contractors are fully useable by researchers within and outside the Center.

STANDARD: Machine readable products shall be released in formats that enable wide accessibility by data users. Documentation shall provide information to identify all variables with survey form items and explain construction of composite items.

To meet this standard the following requirements must be followed:

a) Data Set Names must identify the survey system, component, year of survey, and version number and whether the data is a raw file, SAS file or other.

b) Tapes stored at the Department's central computer facility must be 9-track EBCDIC, 6250 BPI with IBM standard labels or tape cartridges. The Office of Educational Research and Improvement will produce tapes in different specifications to meet user requests. Products for personal computers must be MS-DOS compatible.

c) File structure, record format, and data element conventions must be consistent with NCES checklist on "Data Tape Preparation."

d) Data Base Documentation, must be completed for all tapes and disks. This includes:

1. Abstract or summary.
2. Survey methodology including general description of data collection methods, weighting procedures, description of editing, error resolution, and imputation flags, guidelines for processing the data, dates of coverage, frequency counts, and response rates.
3. Information on how to use replicate weights or PSUs and stratum for variance estimation.
4. Procedures for using weights to produce estimates.
5. File description.

6. Record length, format and count.
7. Data element definitions.

e) A machine readable file must be placed on tapes prepared for public distribution, along with a file description and record layout information.

ADDITIONAL GUIDANCE

SAS and SPSS system files with appropriate documentation must be prepared for each survey release with more than 1,000 respondents.

RELATED STANDARDS:

- o NCES Standard on Confidentiality, IV-01-92
- o NCES Standard for Timely Processing and Release of Data and Data Tapes, IV-04-92
- o NCES Standard for Maintaining Data Series, IV-05-92
- o NCES Standard for Survey Documentation in Center Reports, V-03-92

RELATED CHECKLISTS AND FORMS:

- o Data Tape Preparation Checklist
- o OERI Form 27: Data Base Documentation

Checklist
Data Preparation

A. Data set names should contain the survey system, component, year and edition (preliminary, revision 1, revision 2, final, etc.).

B. Standard Definitions
   1. FIPS Standards are used where applicable.
   2. NCES standard definitions and codes are used where applicable.

C. Data Element Conventions
   1. Numeric fields contain only numbers, zeros or missing values.
   2. Zeros are represented by "0". Blanks or "--" may not be used to represent 0's.
   3. Data should distinguish between legitimate skips and non-response.

4. Suppression symbols are removed from numeric fields and stored in associated "flag" fields.
5. Negative numbers on data tapes are represented in standard (IBM) signed numeric format.
6. When practical, numeric data fields containing continuous variables should be identical in length.
7. Separate record locations are used for all data items.
8. Imputed data should be flagged. Imputation method should be identified in the flag, i.e. 0= original data; 1=logical impute; 2= stochastic impute; 3=impute from previous year; etc. If feasible, imputation cells should be placed on the end of the record

D. Record Conventions
   1. Rectangular structures are used, where possible.
   2. Single record type is used.
   3. Logical record lengths are constant.
   4. Each record contains a unique identifier such as ID.

E. Record Layout
   1. Record layout, location and format are documented.
   2. Blocking factors and block size are documented, where appropriate.
   3. Record counts are included.
   4. Each record type is identified.

F. Format
   1. Tapes
      a. 9 track, EBCDIC, 3480 & 6250 BPI tapes or tape cartridges are used.
      b. Standard alphanumeric characters are used.
      c. Binary or packed decimal fields are avoided unless required by the size of the file or other factors.

   2. Diskettes and CD's
      a. MS-DOS compatible file structures are used.
      b. Data may be in ASCII or files constructed for use in specific software packages. However, files should be directly accessible or able to be translated easily with widely available software, i.e. LOTUS, DBASE, or WordPerfect.

STANDARD: IV-06-92

G. Quality Control Procedures

1. Record counts and totals are consistent between preliminary files and the final released data files or explanations are included in the documentation.

2. Internal inconsistencies are corrected or documented.

3. Major inconsistencies between current and past data are resolved or documented.

4. Imputed data are flagged.

5. Flags are consistently positioned within a file.

6. Codes for missing, refused, and non-applicable data are consistent within a survey or survey system.

7. All necessary steps have been taken to protect the confidential of respondents (see Standard for Maintaining Confidentiality, IV-01-92).

NATIONAL CENTER FOR EDUCATION STATISTICS
OFFICE OF EDUCATIONAL RESEARCH AND IMPROVEMENT
U.S. DEPARTMENT OF EDUCATION

SUBJECT: STANDARD FOR EVALUATION OF SURVEYS
EFFECTIVE DATE: 1/1/92 **NCES STANDARD: V-01-92**

PURPOSE: The results of the statistical evaluation must enable the users of the survey data to understand the quality and limitations of the data and must provide information for planning future surveys or replications of the same survey. Also the inclusion of a systematic assessment of all sources of nonsampling error for key statistics to be studied or reported in NCES publications.

STANDARD 1: All proposed and ongoing surveys conducted by NCES must include in their design an evaluation plan. This plan, to be worked out jointly with SSMD: (1) will identify potential sources of nonsampling error, (2) provides for the measurement of the magnitude of the various types of nonsampling error, and (3) includes studies designed to determine what factors are associated with differential levels of nonsampling error and to assess procedures for reducing the magnitude of these errors, and (4) funding for the evaluation is to be included in the budget request and appropriate activities included in the work statement of the RFP. This will result in the following:

1. Statistical evaluation plan with cost estimates for each project; for ongoing surveys, the plan must be multiyear in nature.

2. Technical report or series of technical reports summarizing results of evaluation studies.

3. Brief statement of evaluation results, for example, nonresponse rates, comparisons to other estimates, to be included as part of survey reports.

4. Recommendations for issues to be evaluated in the next replication of the survey or in similar surveys in the future.

GUIDELINES: To meet this standard, the following process should be undertaken with the assistance of SSMD:

STANDARD: V-01-92

a) GUIDELINE: Review of past surveys similar to the one being planned in order to determine what statistical evaluation data have been collected in prior surveys and any potential problems which have been identified. Based on this review, a summary should be written on what is known about the sources and magnitude of nonsampling error and a list prepared identifying those statistical issues which should be addressed in the current survey's evaluation. The list should be reviewed and prioritized.

b) GUIDELINE: For each of the issues identified as priorities in the above step, the plan should indicate how the issue will be addressed, including what data will be used from within the survey and from outside sources and how these data will be obtained, what kinds of comparisons will be made, what kinds of experiments will be built into the survey, and how the data will be analyzed.

c) GUIDELINE: In addition to issues identified prior to the beginning of the survey, staff should be cognizant of other problem areas arising during the course of the survey and, where possible, collect and analyze appropriate data to assess the magnitude of the problem.

d) GUIDELINE: Data from the statistical evaluation should, where feasible and appropriate, be analyzed prior to or concurrent with the analysis of the survey data so that the results of the evaluation can be taken into account in analyzing and interpreting the actual study data.

e) GUIDELINE: The final product of the evaluation program should be a technical report or series of technical reports on the statistical studies carried out. In addition, a brief summary of the evaluation findings should be prepared for inclusion in the appendix of any report of the survey's findings.

f) GUIDELINE: An additional product of the evaluation activity will be a written set of recommendations as to what should be evaluated in the next replication of the survey (next follow-up or next study in a series).

STANDARD 2: Documentation must be made of the kinds of nonsampling errors found in the survey and of the procedures (if any) used to correct for them. This documentation must be maintained both for future design and also for reviewers and users to understand how the survey data were developed.

STANDARD: V-01-92

GUIDELINES: The following guidelines are helpful in meeting this standard:

a) **GUIDELINE**: During the sample design phase for any survey conducted by or for the Center, each potential source of nonsampling error should be listed and, where possible and appropriate, methods for bounding or estimating the error from each source should be developed and implemented.

b) **GUIDELINE**: Where possible, nonsampling error estimates and bounds should make use of data from other surveys, or from administrative records or censuses: any different source of information is useful as an indicator.

c) **GUIDELINE**: For recurring surveys, a sustained effort should be made toward the development of an error profile document itemizing all sources of error. Where possible, estimates or bounds on the magnitudes of these errors should be provided; the total error model for the survey should be discussed; and the survey should be assessed in terms of this model.

RELATED REFERENCES

Table 1, Attached : Examples of Typical Studies Designed to Evaluate Different Types of Nonsampling Error.

Brooks, Camilla A. and Bailar, Barbara A. An Error Profile: Employment as Measured by the Current Population Survey. Washington: U. S. Department of Commerce, 1978.

Jabine, Thomas B.; King,Karen E.; and Petroni, Rita J. Survey of Income and Program Participation Quality Profile. Washington, D.C.: U.S. Department of Commerce, Bureau of Census, 1990.

Groves, Robert M. et al. Telephone Methods for Surveys. New York: Wiley, 1988.

Groves, Robert M. Survey Errors and Survey Costs. New York: Wiley, 1989.

Kish, Leslie Statistical Design for Research. New York: Wiley, 1987.

STANDARD V-01-92

RELATED STANDARDS AND GUIDANCE:

- o NCES Standard for Initial Planning of Statistical Surveys, I-01-92
- o NCES Standard for Testing Survey Systems, I-03-92
- o NCES Guidance for Monitoring and Documenting Survey Contracts, II-02-92
- o NCES Standard for Evaluation of Surveys, V-01-92
- o NCES Standard for Documenting a Survey System, V-02-92.

TABLE 1

A CHECKLIST DESIGNED TO EVALUATE DIFFERENT TYPES OF NONSAMPLING ERROR

(1) Nonresponse

Unit Nonresponse:

-Description of characteristics of units not responding
-Examination of changes in response rates over time
-Intensive followup of a sample of nonrespondents to ascertain nonresponse bias
-Assessment of method of handling nonresponse: imputation or weighting procedures

Item Nonresponse:

-Description of items not completed, patterns of partial non-response, characteristics of sampling units failing to respond to certain groups of characteristics

(2) Coverage - adequacy of frame

-Matching studies to earlier versions of the same data source or to other data sources
-Comparison of a very reliable external source for some subset of the current population to the current frame
-Analysis of survey returns for deaths, duplicates, changes in classification, and out of scope units
-Field work - such as area listings
-Review of frames by states, associations, LEAs
-Comparison of estimated counts with estimated counts from another

source.

(3) Validity - accuracy of responses
-Re-interview Study with adjudication of disagreements
-Site visits to examine administrative records and compare to subject responses
-Comparison with outside data sources

(4) Reliability - consistency of responses
-Re-interview Study
-Examination of changes in response over repeated questioning
-Agreement among multiple respondents in a sampled unit (e.g. parent/student)
- Agreement of statistics derived from different sections of the questionnaire or different questionnaires.

(5) Survey Design Issues
-Pretests to determine the efficacy of devices to improve response (e.g. offering incentives)
-Pretests to compare alternative ways of collecting or processing data
-Comparison of final design effects with estimated design effects used in survey planning
-In a longitudinal survey, establishment of a small independent replicate of the sample for use as a test group while the survey continues to allow an evaluation of the effect of changes

(6) Estimation
-Examination of the choice of estimator/design
-Possibility of fitting survey distributions to known distributions from other sources to reduce variance and bias
-Re-estimation using alternative techniques, such as alternative outlier treatments, alternative imputation procedures, and alternative variance estimation techniques
-Analysis of the imputation process - frequency of imputation, initial and final distributions of the variables
-Use of generalized variance curves
-Effect of changes in data processing procedures on survey estimates

NATIONAL CENTER FOR EDUCATION STATISTICS
OFFICE OF EDUCATIONAL RESEARCH AND IMPROVEMENT
U.S. DEPARTMENT OF EDUCATION

SUBJECT: STANDARD FOR DOCUMENTING A SURVEY SYSTEM

EFFECTIVE DATE: 1/1/92 **NCES STANDARD:** V-02-92

PURPOSE: To ensure that complete documentation is kept on the Center's projects and their associated deliverables.

STANDARD: The documentation of a survey system must include the history of a project (via the maintenance of records) from its initial planning stages to its final evaluation, in sufficient detail so that major events, decisions, and changes can be reconstructed and studied. In addition to recording the decisions that were made, it is equally important to document why decisions were made. Similarly, the conceptual basis for the methodology is as important as the methodological specifications. It will result in survey system documentation maintained in an accessible and secure place. This documentation will serve as the basis for assessing standards compliance, final methodological reports, data file documentation, and future survey planning.

GUIDELINES: To meet this standard, the following procedures should be followed:

a) GUIDELINE: For each project, one or more individual(s) should be designated to be responsible for keeping records on the project.

b) GUIDELINE: Documentation should include detailed records on the planning, design, development, implementation, and evaluation phases of the project. The records should include changes in the project and the reasons for these changes as well as a) project planning documents, including issues analyses; b) sampling plans; c) correspondence; d) editing specifications; e) progress reports and vouchers; f) OMB clearance package materials; g) any contract addenda/changes that affected the scope of work or technical redirection; and h) contract deliverables.

c) GUIDELINE: For each project, a separate log book and/or data file containing the names of all individuals who have been involved with the project should be kept. For each person on the list, documentation should contain name, address,

affiliation, phone #, and role that person played or is currently playing. This list will also serve as a mailing list. This log book should also record the major day-to- day communication of the project. Verbal decisions concerning the project should be documented and included in log.

d) GUIDELINE: Semi-annually, each Center project should be reviewed for completeness by the branch chief and division director. A written review (complete with suggestions) should be added to file and also presented to individual responsible for record keeping.

e) GUIDELINE: Documentation of any part of the project should be aimed at several different groups including management, technical staff, planners of other surveys, and outside users requiring documentation of varying levels of complexity.

NATIONAL CENTER FOR EDUCATION STATISTICS
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U.S. DEPARTMENT OF EDUCATION

SUBJECT: STANDARD FOR SURVEY DOCUMENTATION IN CENTER REPORTS

EFFECTIVE DATE: 1/1/92 **NCES STANDARD: V-03-92**

PURPOSE: To provide in each Center report the appropriate amount of documentation on the survey data, methodology, and other important aspects of a survey.

STANDARD: All Center reports must include documentation which allows the reader to understand the nature and limitations of the results presented. The level of detail included will vary depending on the type of report. The general areas to be covered include: (1) an abstract; (2) current status of data (preliminary, revised or final) and relation to previous surveys in series; (3) goals of the survey; (4) methodology; and (5) guidelines for using the data. Specific items of information to be included in each of these components in each type of report are provided in the Guidelines section below.

GUIDELINES: To meet this standard the following should be considered:

a) GUIDELINE: Survey documentation should enable the reader -- even the non-statistical user -- to understand its contents, and the use and limitations of data readily and clearly.

b) **GUIDELINE:** The attached table outlines the types of documentation to be included in the various types of Center reports. An "X" indicates the item is to included; a "B" indicates that a brief description should be included "-" indicates the item is not necessary.

RELATED STANDARDS:

- o NCES Standard for Initial Planning of Statistical Surveys, I-01-92
- o NCES Standard for Machine Readable Products, IV-06-92
- o NCES Standard for Documenting a Survey System, V-02-92

CHECKLIST FOR DOCUMENTATION TO BE INCLUDED IN NCES REPORTS

	ED Tab	Analysis	Survey Design	Tech/Eval	Compendia	Stat Brief	R&D
Abstract							
History, purpose and legislative mandates for the survey	B	X	X	B	B	-	B
Target population	X	X	X	X	X	X	X
Time and geographic coverage of the survey	X	X	X	X	X	X	X
Major findings	X	X	-	X	X	X	X
Contact person(s) or relevant office with phone numbers	X	X	X	X	X	X	X
Status of Data							
Identification of the data as preliminary, test, revised or final	X	X	-	-	X	-	-
A schedule of revisions	X	X	-	-	-	-	-
Relations of survey to previous surveys in same series including their differences	X	X	X	-	X	-	X
The Goals							
Delineation of research, policy and/or programmatic issues to be addressed in the survey, and how they relate to the agency's legislative mandates and priorities.	B	X	X	-	B	-	X
Review of relevant studies and existing information concerning the contents and, if necessary, methodology of the survey.	-	X	-	-	-	-	X
A statement of the problem of study in terms of the overall purpose, specific problem elements to be studied, hypotheses to be tested and/or questions to be answered in the survey.	-	X	X	B	-	-	X
Methodology and Data Presentation							
Definitions of critical terms and concepts	X	X	B	B	B	-	X
Sample Design							
The target population	B	X	X	B	B	-	B
The survey frame, including the source of the frame, reference date and number of units.	B	X	X	B	B	-	B
The units selected for the sample at each stage.	B	X	X	B	-	-	B
The number of sampling units at each stage.	B	X	X	B	B	-	B
The sample allocation procedure at each stage	B	X	X	B	B	-	B
The sample selection process at each stage	B	X	X	B	B	-	B
The response rates and their derivations	B	X	X	B	B	-	B
Measures of size defined for sampling with "probability proportionate to size"	B	X	X	B	B	-	B
Data Collection							
The nature of the instruments used, i.e., the contents or kinds of data sought in major sections of the instrument(s) and the number of questions in each major section	B	X	X	B	B	-	X
The method of administering the instrument(s)	B	X	X	B	B	-	X
Copies of the interview forms/questionnaires, or availability of these copies upon request.	X	X	X	X	X	-	X
Quality control procedures used in the data collection process and the results of the implementation of these procedures	-		X	-	-	-	-
Results of pretest and independent evaluations	-	-	X	X	-	-	-
Problems encountered	B	X	X	X	B	-	X

GLOSSARY FOR NCES STANDARDS

(Adopted from the Standards for Education Data Collection and Reporting)

Abstracting - the process of converting information from existing recording into a format required for analysis.

Alternative Hypothesis - see hypothesis.

Analytic Techniques - techniques which address questions about how or why units in the population are related (see descriptive techniques).

Archiving - a process of rotating copies of files used in various phases of data processing through a secure area.

Audiences - persons and organizations who will be guided in making decisions by the results of the data collection activity and all others who are interested in the results of the data collection.

Base Weight - the product of all component weights; accounts for all stages of sampling units.

Bias (due to nonresponse) - difference that occurs when respondents differ as a group from nonrespondents on a characteristic being studied.

Bias (of an estimate) - the difference between the expected value of a sample estimate and the corresponding true value for the population.

Burden - the aggregate hours realistically required for data providers to participate in a data collection.

CAPI - Computer Assisted Personal Interviewing enables data collection staff to use portable microcomputers to administer a data collection form while viewing the form on the computer screen. As responses are entered directly into the computer, they are used to guide the interview and are automatically checked for specified range, format, and consistency edits.

CATI - Computer Assisted Telephone Interviewing uses a computer system that allows a telephone interviewer to administer a data collection form over the phone while viewing the form on a computer screen. As the interviewer enters responses directly into the computer, the responses are used to guide the interview and are automatically checked for specified range, format, and consistency edits.

GLOSSARY FOR NCES STANDARDS CONTINUED

CD ROM - Compact Disc Read Only Memory is a computer storage disk in the same physical form as an audio CD. A CD Rom disk can store approximately 550 megabytes of digital data.

Census - a count of all the elements of a population and a determination of the distributions of their characteristics.

Closed-Ended - a type of question in which the data provider's responses are limited to given alternatives.

Codebook - a record of each variable being measured, including variable name, columns occupied by each variable in the data matrix, and values used to define each variable.

Coding - the act of categorizing raw data into groups or giving the data numerical values.

Component Weight - for each stage of sampling, the component weight is equal to the reciprocal of the probability of selecting the unit at that stage.

Computer Assisted Personal Interviewing - see CAPI.

Computer Assisted Telephone Interviewing - see CATI.

Confidence Interval - a sample-based estimate expressed as an interval or range of values within which the true population value is expected to be located (with a specified degree of confidence).

Consistency Edits - see logic edits.

Construct - a concept that describes a characteristic, attribute, or variable relationship. The concepts are often unobservable ideas or abstractions such as community context or performance.

Correlation - the tendency for certain values or levels of one variable to occur with particular values or levels of another variable.

Correlation Coefficient - a measure of association between two variables that can range from -1.00 (perfect negative relationship) to 0 (no relationship) to + 1.00 (perfect positive relationship).

Data Dictionary - a database that holds the name, type, range of values, sources,

and authorization for access for each data element in an organization's files and database. It may also indicate which application programs use that data so that when a change in data structure is contemplated, a list of the affected programs can be generated.

Data Element - the most basic unit of information. In data processing it is the fundamental data structure. It is defined by its size (in characters) and data type (e.g. alphanumeric, numeric only, true/false, date) and may include a specific set of values or range of values.

Data File Backup - copies of the latest data files that can be used to restore lost data.

Data Flow Diagram - depicts the movement of data within a system by describing the data and the manual and machine processing performed on the data.

Descriptive Techniques - techniques that address questions about how many units in the population surveyed have a certain characteristic.

Design Effect - the variance of an estimate divided by the variance of the estimate that would have occurred if a sample of the same size had been selected using simple random sampling.

Development Stage - the third of four stages in the development of a data processing system; entails writing computer programs that follow the systems design specifications.

Field Test - the study of a data collection activity in the setting where it is to be conducted. Emphasis is on the place, not the method.

File - a set of related records.

File Corruption - a file that has been physically damaged or that contains errors on the magnetic surface that prevent the file from being accessed by a computer.

File Design - the method used by a file to store and retrieve data.

File Recovery - copying the file from a current backup version.

File Regeneration - the process of running necessary software to rebuild the file to its current form.

GLOSSARY FOR NCES STANDARDS CONTINUED

Final Adjusted Weight - the product of all base-weight components, nonresponse adjustments, and the poststratification factor, if any.

"Hot Deck" Imputation - a process that replaces missing data items with values observed from other sampled cases.

Hypothesis - an assumption about a property or characteristic of a population. In statistical theory, there are usually two hypotheses under consideration, and the goal is to decide which of the two hypotheses is likely to be true. The null hypothesis usually corresponds to the hypothesis to be tested by accepted statistical techniques. That is, the null hypothesis is considered to be true unless there is compelling evidence from the sample data that it is false. The alternative hypothesis is the complement of the null hypothesis.

Imputation For Item or Survey Nonresponse - substituting plausible values for missing values in the survey data set.

Inferential Techniques - see analytic techniques.

Input - any data entered into a computer or the act of entering data by keyboard, light pen, mouse, graphics, table, magnetic disk or tape, communications channel or key-punch card.

Item Nonresponse - items on a data collection from that are missing when a response was expected.

Linearity - a relationship in which, when any two variables are plotted, a straight line results.

Logic Edits - checks made of the data to ensure common sense consistency among the responses from a data provider.

Master File - a collection of records holding the current data in an information system. It contains descriptive data as well as summary information.

Modeling - a general class of statistical techniques in which the mathematical relationships between several variables are developed and analyzed.

Multiple Comparison Procedures - statistical procedures that take into account the fact that several statistical tests (a family of tests) are being performed simultaneously. In particular, multiple comparison procedures give the proper type I errors on an experimentwise or familywise basis.

GLOSSARY FOR NCES STANDARDS CONTINUED

Nonresponse - cases in data collection activities in which potential data providers are contacted but refuse to reply or are unable to do so for reasons such as deafness or illness.

Nonresponse Bias - occurs when respondents as a group differ from nonrespondents in their answers to questions on a data collection form.

Nonsampling Error - an error in sample estimates that cannot be attributed to sampling fluctuations. Such errors may arise from many sources including imperfect selection, bias in response or estimation, and errors of observation and recording.

Null Hypothesis - see hypothesis.

Open-Ended - a type of interview question that does not limit the potential responses to predetermined altematives.

Operational Definition - the sequence of steps or procedures a researcher follows to obtain a measurement; specifies how to measure a variable.

Operationalize - to describe constructs or variables in concrete terms so that measurements can be made.

Optical Disk - a disk that is read optically (e.g., by laser technology), rather than magnetically.

Out-of-Range Response - a response that is outside of the predetermined range of values considered acceptable for a particular item.

Outliers - an observation so far separated in value from other observations that it raises the question of whether it comes from a different population or whether the sampling technique is at fault.

Output - any computer-generated information appearing on hard copy, video display, or machine readable form (e.g., disk or tape).

Pilot Test - a brief and simplified preliminary study designed to test methods and to learn whether a proposed data collection activity appears likely to yield valuable results.

Population - all individuals in the group to which conclusions from a data collection activity are to be applied.

GLOSSARY FOR NCES STANDARDS CONTINUED

Population Variance - a measure of dispersion defined as the average of the squared deviations between the observed values of the elements of a population or sample and the corresponding mean of those values.

Poststratification Adjustment - a weight adjustment that forces survey estimates to match independent population totals within selected poststrata (adjustment cells).

Precision - the difference between a sample-based estimate and its expected value. Precision is measured by the sampling error (or standard error) of an estimate.

Pretest - a test to determine performance prior to the administration of a data collection activity.

Probability Sample - a sample selected by a method such that each unit has a fixed and determined probability of selection.

Processing - the manipulation of data.

Range Check - a determination of whether responses fall within a predetermined set of acceptable values.

Record Format - the layout of the information contained in a data record (includes the name, type, and size of each field in the record).

Records - a logical grouping of data elements within a file upon which a computer program acts.

Regression - a statistical technique in which the functional relationship between a dependent variable and one or more independent variables can be estimated.

Reliability - the consistency in results of a test or measurement including the tendency of the test or measurement to produce the same results when applied twice to some entity or attribute believed not to have changed in the interval between measurements.

Replication Techniques - methods of estimating sampling errors that involve repeated estimation of the same statistic using various subsets of data providers. The two primary methods are balanced repeated replication (BRR) and the jackknife technique.

Sample - subgroup selected from the entire population.

GLOSSARY FOR NCES STANDARDS CONTINUED

Sampling Error - that part of the difference between a value for an entire population and an estimate of that value derived from a probability sample that results from observing only a sample of values.

Sampling Strata - mutually exclusive and exhaustive subsets of the population within which elements of the population have similar characteristics, to the extent feasible.

Sampling Variance - a measure of dispersion of values of a statistic that would occur if the survey were repeated a large number of times using the same sample design, instrument, and data collection methodology. The square root of the sampling variance is the standard error.

Simple Hypothesis - a statistical hypothesis that completely specifies the distribution function of the variates concerned in the hypothesis.

Special Population - a subset of the total population distinguishable by unique needs, characteristics, or interests (e.g., disadvantaged students, gifted students, physically or mentally handicapped students, vocational education students).

Standard Deviation - the most widely used measure of dispersion of a frequency distribution. It is equal to the positive square root of the population variance.

Standard Error - the positive square root of the sampling variance. It is a measure of the dispersion of the sampling distribution of a statistic. Standard errors are used to establish confidence intervals for the statistics being analyzed.

Statistically Significant - there is a low probability that the result is attributable to chance alone.

Symmetry - refers to a property of a relationship in which no distinction is made between independent and dependent variables; 'asymmetry" refers to a property of a relationship in which such a distinction is made. For example, the Pearson product-moment correlation coefficient is a symmetric measure of linear association between two intervally scaled variables while the linear regression coefficient is an asymmetric measure for such variables.

System Flowchart - shows, in addition to the flow of data, the relationship of macro-components of the system.

System Operator - a person who is responsible for the physical operation of the equipment (e.g., CPUs, disk drives, tape drives, printers).

Systems Design Stage - the second of four stages in the development of an information processing system, it expands upon the systems requirements specified in the Systems Requirements Stage.

Systems Requirements Stage - the first of four stages in the development of an information processing system, it defines the scope of the project.

T-Test - any statistical test in which the underlying distribution of the test statistic has a Student's t-distribution. Most commonly, t-tests are used to compare the means of two subsets of a population under study.

Testing Stage - the fourth of four stages in the development of an information processing system, it provides for the testing of all computer programs according to a test plan before the system is considered operational

Transaction File - a collection of records that record any change in a master file. The data in transaction files are used to update the data in master files. Transaction files also serve as audit trails and, after a period of time, are transferred from on-line disk to off-line tape for future statistical and historical processing.

Type I Error - in a formal statistical test of a hypothesis, the probability of rejecting the null hypothesis when it is true.

Type II Error - in a formal statistical test of a hypothesis, the probability of accepting the null hypothesis when it is false.

Unit Nonresponse - failure of a survey respondent to provide any information.

Validation Sample - a sample drawn from a study so that the survey responses can be compared with values from another source that is assumed to contain the correct values.

Validity - the capacity of a measuring instrument to predict what it was designed to predict; stated most often in terms of the correlation between scores on the instrument and measures of performance on some criterion.

Variance - see population variance and sampling variance.

Verification - checking the work performed by another person for accuracy.

GLOSSARY FOR NCES STANDARDS CONTINUED

Weighted Estimates - estimates from a sample survey in which the sample data are weighted (multiplied) by factors reflecting the sample design. The weights (referred to as sampling weights) are typicality equal to the reciprocals of the overall selection probabilities, multiplied by a nonresponse or poststratification adjustment.

NCES LEGISLATION

this Act (relating to the National Assessment of Education Progress);

(E) not less than $8,750,000 shall be available in each fiscal year to carry out section 406 of this Act, except for subsection (i) of that section (relating to the Center for Educational Statistics); and

(F) not less than $500,000 shall be available in each fiscal year to carry out subsection (d)(4)(A)(iii) of this section (relating to field initiated research).

(2) If the sums appropriated for any fiscal year are less than the amount required to be made available under subparagraphs (A) through (F) of paragraph (1), then each of the amounts required to be made available under such subparagraphs shall be ratably reduced. If additional amounts become available for any such fiscal year, such reduced amounts shall be increased on the same basis as they were reduced.

(20 U.S.C. 1221e) Enacted June 23, 1972, P.L. 92-318, sec. 301(a)(2), 86 Stat. 328, 332; amended August 21, 1974, P.L. 93-380, sec. 802(b)(2)(B), 88 Stat. [40; amended October 12, 1976, P.L. 94-482, sec. 403, 90 Stat. 2227, 2228, 2229, 2230; amended Nov. 1, 1978, P.L. 95-561, sec. 1242, 92 Stat. 2352, 2353; see also general reference Oct. 17, 1979, P.L. 96-88, sec. 301, 93 Stat. 677; amended Oct. 3, 1980, P.L. 96-374, sec. 1311-1314, 94 Stat. 1498, 1499; amended Oct. 19, 1984, P.L. 98-511, secs. 702(a), 703, 704(a), 98 Stat. 2405, 2406; amended Oct. 17, 1986, P.L. 99-498, §1401(a), 100 Stat. 1589; amended June 3, 1987, P.L. 100-50, §24(a), 101 Stat. 362; amended April 28, 1988, P.L. 100-297, secs. 3001(p), 3002, 3403(c), 102 Stat. 337, 349.

NATIONAL CENTER FOR EDUCATION STATISTICS

SEC. 406. (a)(1) There is established, within the Office of Educational Research and Improvement, a National Center for Education Statistics (hereafter[1] in this section referred to as the "Center"). The general design and duties of the National Center for Education Statistics shall be to acquire and diffuse among the people of the United States useful statistical information on subjects connected with education (in the most general and comprehensive sense of the word) particularly the retention of students, the assessment of their progress, the financing of institutions of education, financial aid to students, the supply of and demand for teachers and other school personnel, libraries, comparisons of the education of the United States and foreign nations and the means of promoting material, social, and intellectual prosperity through education.

(2)(A) The Center shall be headed by a Commissioner of Education Statistics who shall be appointed by the President, by and with the advice and consent of the Senate. The Commissioner of the National Center for Education Statistics shall have substantial experience and knowledge of programs encompassed by the National Center[2] The Commissioner shall be paid in accordance with section 5315 of title 5, United States Code. The Commissioner shall serve for terms of 4 years, except that the initial appointment shall commence June 21, 1991.

(B) There shall be within the Center (i) an Associate Commissioner for Statistical Standards and Methodology who shall be qualified in the field of mathematical statistics or statistical methodology;

[1] So in original. "Hereafter" probably should be stricken.
[2] So in original. Probably should be followed by a period.

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and (ii) an Associate Commissioner for Data Collection and Dissemination, who shall be an individual who has extensive knowledge of uses of statistics for policy purposes at all levels of American education, and who shall promote the participation of States, localities, and institutions of higher education in designing education statistics programs, encourage widespread dissemination and use of the Center's data, and promote United States participation in international and regional education statistics. The Commissioner may appoint such other Associate Commissioners as may be necessary and appropriate.".

(b) The purpose of the Center shall be to collect, and analyze[1] and disseminate statistics and other data related to education in the United States and in other nations. The Center shall—

(1) if feasible, on a State-by-State basis, collect, collate, and, from time to time, report full and complete statistics on the conditions of education in the United States;

(2) conduct and publish reports on specialized analyses of the meaning and significance of such statistics;

(3) assist State and local educational agencies, including State agencies responsible for postsecondary education, in improving and automating their statistical and data collection activities (and shall establish a special program to train employees of such State and local agencies in the use of the Center's standard statistical procedures and concepts and may establish a fellows program to temporarily appoint such employees as fellows at the Center for the purpose of familiarization with the operations of the Center);

(4) review and report on educational activities in foreign countries;

(5) conduct a continuing survey of institutions of higher education and local educational agencies to determine the demand for, and the availability of, qualified teachers and administrative personnel, especially in critical areas within education which are developing or are likely to develop, and assess the extent to which programs administered in the Department of Education are helping to meet the needs identified as a result of such continuing survey; and

(6) access[2] periodically the current and projected supply and demand for elementary and secondary school teachers (including teachers at the pre-school level) and early childhood education development personnel with particular attention to—

(A) long-term and short-term needs for personnel in various subject areas or teaching specialities;

(B) shortages in particular types of schools or communities, and in States or regions;

(C) the number of minorities entering teaching;

(D) the proportions of women and minorities in educational administration, and the trends over time;

(E) the demographic characteristics, academic qualifications, job preparation, experience and skills of existing teachers and new entrants in the field of education;

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[1] So in law. Do not need "and".
[2] So in original. Probably should be "assess".

(F) the effect of the introduction of State mandated teacher competency tests on the demographic and educational characteristics of teachers and the supply of teachers; and

(G) the rate at which teachers leave teaching, their reasons for leaving, the sources of supply for new entrants, and the trends over time.

(c)(1) There shall be an Advisory Council on Education Statistics which shall be composed of 7 public members appointed by the Secretary and such ex officio members as are listed in subparagraph (2). Not more than 4 of the appointed members of the Council may be members of the same political party.

(2) The ex officio members of the Council shall be—

(A) the Assistant Secretary,

(B) the Director of the Census,

(C) the Commissioner of Labor Statistics,

(D) Commissioner [1] of Education Statistics, and;[2]

(E) Chairman,[3] National Commission on Libraries and Information Science.

(3) Appointed members of the Council shall serve for terms of 3 years, as determined by the Secretary, except that in the case of initially appointed members of the Council, they shall serve for shorter terms to the extent necessary that the terms of office of not more than 3 members expire in the same calendar year.

(4) The Commissioner of Education Statistics shall serve as the non-voting presiding officer of the Council.

(5)(A) The Council shall meet at the call of the presiding officer, except that it shall meet—

(i) at least four times during each calendar year; and

(ii) in addition, whenever three voting members request in writing that the presiding officer call a meeting.

(B) Six members of the Council shall constitute a quorum of the Council.

(6) The provisions of section 448(b) of part D of this title shall not apply to the Council established under this subsection.

(7) The Council shall review general policies for the operation of the Center and shall be responsible for advising on standards to insure [4] that statistics and analyses disseminated by the Center are of high quality and are not subject to political influence.

(8) The Commissioner may appoint such other ad hoc advisory committees as the Commissioner considers necessary.

(d)(1) The Commissioner shall, not later than June 1 of each year, submit to the Congress an annual report which—

(A) contains a description of the activities of the Center during the then current fiscal year and a projection of its activities during the succeeding fiscal year;

(B) sets forth estimates of the cost of the projected activities for such succeeding fiscal year; and

(C) includes a statistical report on the condition of education in the United States during the two preceding fiscal years and

[1] So in original. Probably should read "the Commissioner".
[2] So in original. Probably should read "_Statistics; and".
[3] So in original. Probably should read "the Chairman".
[4] So in original. Probably should be "ensure".

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a projection, for the three succeeding fiscal years, of estimated statistics related to education in the United States.

(2) The Secretary shall submit annually a report to the Congress giving information of the State of Education in the Nation. In such report the Secretary shall clearly set forth the Secretary's views of critical needs in education and the most effective manner in which the nation and the Federal Government may address such needs.

(3) The Center shall develop and enforce standards designed to protect the confidentiality of persons in the collection, reporting, and publication of data under this section. This subparagraph shall not be construed to protect the confidentiality of information about institutions, organizations, and agencies receiving grants from or having contracts with the Federal Government.

(4)(A)[1] Except as provided in this section, no person may—

(i) use any individually identifiable information furnished under the provisions of this section for any purpose other than statistical purposes for which it is supplied;

(ii) make any publication whereby the data furnished by any particular person under this section can be identified; or

(iii) permit anyone other than the individuals authorized by the Commissioner to examine the individual reports; or

(B) No department, bureau, agency, officer, or employee of the Government, except the Commissioner of Education Statistics in carrying out the purposes of this section, shall require, for any reason, copies of reports which have been filed under this section with the Center for Education Statistics or retained by any individual respondent. Copies of such reports which have been so retained or filed with the Center or any of its employees or contractors or agents shall be immune from legal process, and shall not, without the consent of the individual concerned, be admitted as evidence or used for any purpose in any action, suit, or other judicial or administrative proceeding. This subsection shall only apply to individually identifiable data (as defined in subparagraph (E)).[2]

(C) Whoever, being or having been an employee or staff member appointed under the authority of the Commissioner or in accordance with this section of the Act, having taken and subscribed the oath of office, or having sworn to observe the limitations imposed by subsection (a), knowingly publishes or communicates any individually identifiable information (as defined in subparagraph (E)), the disclosure of which is prohibited under the provisions of subparagraph (A), and which comes into his or her possession by reason of employment (or otherwise providing services) under the provisions of this section, shall be fined under title 18, United States Code, or imprisoned not more than 5 years, or both.

(D) The Commissioner may utilize temporary staff, including employees of Federal, State, or local agencies or instrumentalities including local education agencies, and employees of private organizations to assist the Center in performing the work

[1] So in original. Should be full measure. See P.L. 100-297, sec. 3001(m), 102 Stat. 335.
[2] So in original. Probably should be subparagraph "(F)".

authorized by this section, but only if such temporary staff is sworn to observe the limitations imposed by this section.

(E) No collection of information or data acquisition activity undertaken by the Center shall be subject to any review, coordination or approval procedure except as required by the Director of the Office of Management and Budget under the rules and regulations established pursuant to chapter 85 of title 44, United States Code.

(F) For the purposes of this section—

(i) the term "individually identifiable information" means any record, response form, completed survey or aggregation thereof from which information about individual students, teachers, administrators or other individual persons may be revealed;

(ii) the term "report" means a response provided by or about an individual to an inquiry from the Center and does not include a statistical aggregation from which individually identifiable information cannot be revealed; and

(iii) as used in clause (i), the term "persons" does not include States, local educational agencies, or schools.

(G)(i) This paragraph shall not apply to—

(I) the survey required by section 1303(c) of the Higher Education Amendments of 1986; or

(II) to any longitudinal study concerning access, choice, persistence progress, or attainment in postsecondary education.

(ii) Any person, except those sworn to observe the limitation of this subsection, who uses any data as described in clause (i) provided by the Center, in conjunction with any other information or technique (including de-encryption), to identify any individual student, teacher, administrator, or other person and who discloses, publishes, or uses for a purpose other than that for which it was collected, or who otherwise violates clause (i) or (ii) of subparagraph (A), shall be fined under title 18, United States Code, or imprisoned not more than 5 years, or both.

(iii) No employee or staff member of the Center or of an institution of higher education may be found criminally liable under subparagraph (C), based on a violation of subparagraph (A) or clause (i), if such employee or staff member has taken reasonable precautions, consistent with the purpose of this section, to ensure the confidentiality of data made available to the public.

(H) Nothing in this paragraph shall restrict the right of the Comptroller General of the United States to gain access to any reports or other records, including information identifying individuals, in the Center's possession; except that the same restrictions on disclosure that apply to the Center under subparagraphs (B) and (G) shall apply to the General Accounting Office.

(e)(1) The Center is authorized to furnish transcripts or copies of tables and other statistical records and make special statistical compilations and surveys for State and local officials, public and private organizations, and individuals. The Center shall provide State and local educational agencies opportunities to suggest the development of particular compilations of statistics, surveys, and

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analyses that would assist those educational agencies. The Center shall furnish such special statistical compilations and surveys as the Committees on Labor and Human Resources and on Appropriations of the Senate and the Committees on Education and Labor and on Appropriations of the House of Representatives may request. Such statistical compilations and surveys, other than those carried out pursuant to the preceding sentence, shall be made subject to the payment of the actual or estimated cost of such work. In the case of nonprofit organizations or agencies, the Secretary may engage in joint statistical projects, the cost of which shall be shared equitably as determined by the Secretary: *Provided*, That the purposes of such projects are otherwise authorized by law. All funds received in payment for work or services described in this paragraph shall be deposited in a separate account which may be used to pay directly the costs of such work or services, to repay appropriations which initially bore all or part of such costs, or to refund excess sums when necessary.

(2)(A) The Center shall participate with other Federal agencies having a need for educational data in forming a consortium for the purpose of providing direct joint access with such agencies to all educational data received by the Center through automated data processing. The Library of Congress, General Accounting Office, and the Committees on Labor and Human Resources and Appropriations of the Senate and the Committees on Education and Labor and Appropriations of the House of Representatives shall, for the purposes of this subparagraph, be considered Federal agencies.

(B) The Center shall, in accordance with regulations published for the purpose of this paragraph, provide all interested parties, including public and private agencies and individuals, direct access to data collected by the Center for purposes of research and acquiring statistical information.

(3)[1] In carrying out any authorized responsibilities under this section, the Commissioner may enter into contracts under regular competitive procedures of the Federal Government or other financial arrangements. Contracts or financial arrangements may also include sole source contracts with States, additional institutions, organizations performing international studies, and associations that are nationally representative of a wide variety of States or nonpublic schools. The Commissioner shall submit annually a report to the appropriate committees of the Congress, listing each sole source contract, its purpose, and the reasons why competitive bidding was not feasible in each such instance.

(4) The Commissioner is authorized to prepare and publish such information and documents as may be of value in carrying out the purposes of this section. Periodically, the Commissioner shall issue a regular schedule of publications.

(5) In addition to the condition of education report under subsection (d), the Commissioner is authorized to make special reports on particular subjects whenever required to do so by

[1] So in original. Margin should be full measure for paragraphs (3)–(9).

the President or either House of Congress or when considered appropriate by the Commissioner.

(6) The Commissioner is authorized to use information collected by other offices in the Department of Education and by other executive agencies and to enter into interagency agreements for the collection of statistics for the purposes of this section. The Commissioner is authorized to arrange with any agency, organization, or institution for the collection of statistics for the purposes of this section and may assign employees of the Center to any such agency, organization, or institution to assist in such collection.

(7) The Commissioner is authorized to use the statistical method known as sampling to carry out this section. Data may be collected from States, local educational agencies, schools, libraries, administrators, teachers, students, the general public, and such other individuals, persons, organizations, agencies, and institutions as the Commissioner may consider appropriate.

(8) To assure the technical quality and the coordination of statistical activities of the Department, the Commissioner shall provide technical assistance to Department offices that gather data for statistical purposes. Such assistance may include a review of and advice on data collection plans, survey designs and pretests, the management of data, and the quality of reporting of data.

(9) The Commissioner is authorized to—

(A) select, appoint, and employ such officers and employees as may be necessary to carry out the functions of the Center, subject to the provisions of title 5, United States Code (governing appointments in the competitive service), and the provisions of chapter 51 and subchapter III of chapter 53 of such title (relating to classification and General Schedule pay rates); and

(B) notwithstanding any other provision of this Act, to obtain services as authorized by section 3109 of title 5, United States Code, at a rate not to exceed the equivalent daily rate payable for grade GS–18 of the General Schedule under section 5332 of such title.

(f)(1)[1] There are authorized to be appropriated for the purposes of this section (including salaries and expenses) $42,323,000 for fiscal year 1989, and such sums as may be necessary for each of the fiscal years 1990, 1991, 1992, and 1993.

(2)[2] The Commissioner may contract with States to carry out subsection (h). Such contracts may not exceed the additional cost to the State—

(A) of meeting the information and data gathering requirements in compliance with such subsection; or

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[1] Section 405(f)(1)(D) reserves a minimum amount to carry out subsection (l), relating to the National Assessment of Educational Progress, in each fiscal year in which amounts appropriated to carry out section 405 and this section exceed amounts appropriated for such purpose in the fiscal year 1986.

[2] So in original. Margins should conform to (f)(1). Subparagraphs (A) and (B) should be indented 2 ems only.

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(B) for compliance with related efforts of the National Center for Education Statistics to achieve comparable and uniform data consistent with the purposes of this subsection.

(g)(1) In addition to its other responsibilities, the Center shall collect uniform data from the States on the financing of elementary and secondary education. Each State receiving funds under the Education Consolidation and Improvement Act of 1981 shall cooperate with the Center in this effort.

(2)[1] In addition to other duties of the Commissioner under this section, it shall be the responsibility of the Commissioner to issue regular public reports to the President and Congress on dropout and retention rates, results of education, supply and demand of teachers and school personnel, libraries, financial aid and on such other education indicators as the Commissioner determines to be appropriate.

(3) The Commissioner shall establish a special study panel to make recommendations concerning the determination of education indicators for study and report under paragraph (2). Not more than 18 months after the date of the enactment of the Augustus F. Hawkins-Robert T. Stafford Elementary and Secondary School Improvement Amendments of 1988, the Commissioner shall submit the report of the panel to the appropriate committees of the Congress. The panel shall cease to exist 6 months after the date of such submission.

(4)(A) The Center shall conduct an annual national survey of dropout and retention rates as an education indicator.

(B) The Commissioner shall appoint a special task force to develop and test an effective methodology to accurately measure dropout and retention rates. Not later than 1 year after the date of enactment of the Augustus F. Hawkins-Robert T. Stafford Elementary and Secondary School Improvement Amendments of 1988, the task force shall submit a report of its recommendations, including procedures for implementation of such recommendations, to the Commissioner and the appropriate committees of the Congress.

(C) On the second[2] Tuesday after Labor Day of 1989 and on each such Tuesday thereafter, the Center shall submit a report to the appropriate committees of the Congress of the dropout and retention rate prevailing on March 30 of each such year.

(5)(A) As of March 30, 1990, and not less than every 8 years thereafter, the Center shall conduct a national study and survey of financial aid in accordance with the provisions of section 1303(c) of the Higher Education Amendments of 1986. The Center shall submit a report to the appropriate committees of the Congress concerning the findings of such study[3]

(B) Concurrent with each survey, the Center.[4] shall conduct longitudinal studies of freshman and graduating students concerning access, choice, persistence progress, curriculum and attainment. Such studies shall evaluate such students at 3 points over a 6-year interval.

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[1] So in original. Margin should be full measure for paragraphs (2)–(5)

[2] So in law. Probably should read "On the second Tuesday after Labor Day of 1989 and on the second Tuesday after Labor Day of each succeeding year".

[3] So in original. Probably should be followed by a period.

[4] So in original. Period probably should be deleted.

(6) On April 1, 1993, and every 10 years thereafter, the Center shall submit a report to the appropriate committees of the Congress concerning the social and economic status of children who reside in the areas served by different local educational agencies. Such report shall be based on data collected during the most recent decennial census.

(7) The Center shall conduct a study of a statistically relevant sample of students enrolled in elementary and secondary school and postsecondary education training concerning educational progress, intellectual development, and economic prosperity. The study shall collect data on participation in higher education, including enrollment, persistence, and attainment. Such study shall evaluate such students by such criteria at 2-year intervals. As of February 1, 1989, and every 8 years thereafter, the Commissioner shall select a sample of students enrolled in school for this study.

(8) The Center with the assistance of State library agencies, shall develop and support a cooperative system of annual data collection for public libraries. Participation shall be voluntary; however, all States should be encouraged to join the system. Attention should be given to insuring[1] timely, consistent and accurate reporting.

(9) The National Center for Education Statistics shall conduct a study on the effects of higher standards prompted by school reform efforts on student enrollment and persistence. The study shall examine academic achievement, and graduation rates of low-income, handicapped, limited English proficient, and educationally disadvantaged students.

(b)(1) There is established within the Center a National Cooperative Education Statistics System (hereafter[2] referred to in this subsection as the "System"). The purpose of the System is to produce and maintain, with the cooperation of the States, comparable and uniform educational information and data that are useful for policymaking at the Federal, State, and local level.

(2) Each State that desires to participate in the system shall—

(A) first develop with the Center the information and data-gathering requirements that are needed to report on the condition and progress of elementary and secondary education in the United States, such as information and data on—

(i) schools and school districts;

(ii) students and enrollments, including special populations;

(iii) the availability and use of school libraries and their resources;

(iv) teachers, librarians, and school administrators;

(v) the financing of elementary and secondary education;

(vi) student outcomes, including scores on standardized tests and other measures of educational achievement; and

(vii) the progress of education reform in the States and the Nation; and

[1] So in original. Probably should be "ensuring".
[2] So in original. "Hereafter" probably should be stricken.

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(B) then enter into an agreement with the Center for that fiscal year to comply with those information and data-gathering requirements.

(3) To establish and maintain the system,[1] the Commissioner—

(A) shall—

(i) provide technical assistance to the States regarding the collection, maintenance, and use of the System's data, including the timely dissemination of such data; and

(ii) to the extent possible, implement standard definitions and data collection procedures; and

(B) may—

(i) directly, or through grants, cooperative agreements, or contracts, conduct research, development, demonstration, and evaluation activities that are related to the purposes of the System; and

(ii) prescribe appropriate guidelines to ensure that the statistical activities of the States participating in the System produce data that are uniform, timely, and appropriately accessible.

(i)(1) With the advice of the National Assessment Governing Board established by paragraph (5)(a)(i), the Commissioner shall carry out, by grants, contracts, or cooperative agreements with qualified organizations, or consortia thereof, a National Assessment of Educational Progress. The National Assessment of Educational Progress shall be placed in the National Center for Education Statistics and shall report directly to the Commissioner for Educational Statistics. The purpose of the National Assessment is the assessment of the performance of children and adults in the basic skills of reading, mathematics, science, writing, history/geography, and other areas selected by the Board.

(2)(A) The National Assessment shall provide a fair and accurate presentation of educational achievement in skills, abilities, and knowledge in reading, writing, mathematics, science, history/geography, and other areas specified by the Board, and shall use sampling techniques that produce data that are representative on a national and regional basis and on a State basis pursuant to subparagraphs (C)(i) and (C)(ii). In addition, the National Assessment shall—

(i) collect and report data on a periodic basis, at least once every 2 years for reading and mathematics; at least once every 4 years for writing and science; and at least once every 6 years for history/geography and other subject areas selected by the Board;

(ii) collect and report data every 2 years on students at ages 9, 13, and 17 and in grades 4, 8, and 12;

(iii) report achievement data on a basis that ensures valid reliable trend reporting;[3]

(iv) include information on special groups.

(B) In carrying out the provisions of subparagraph (A), the Secretary and the Board appointed under paragraph (5) shall assure that at least 1 of the subject matters in each of the 4 and 6 year cycles

[1] So in original. Probably should be capitalized.
[2] So in original. Probably should be "(5)(A)(i)".
[3] So in original. Probably should be "; and".

described in subparagraph (A)(i) will be included in each 2 year cycle Assessment.

(C)(i) The National Assessment shall develop a trial mathematics assessment survey instrument for the eighth grade and shall conduct a demonstration of the instrument in 1990 in States which wish to participate, with the purpose of determining whether such an assessment yields valid, reliable State representative data.

(ii) The National Assessment shall conduct a trial mathematics assessment for the fourth and eighth grades in 1992 and, pursuant to subparagraph (6)(D),[1] shall develop a trial reading assessment to be administered in 1992 for the fourth grade in States which wish to participate, with the purpose of determining whether such an assessment yields valid, reliable State representative data.

(iii) The National Assessment shall ensure that a representative sample of students participate in such assessments.

(iv) No State may agree to participate in the demonstration described in this subsection without full knowledge of the process for consensus decisionmaking on objectives to be tested, required in paragraph (6)(E), and of assessment demonstration standards for sampling, test administration, test security, data collection, validation and reporting. States wishing to participate shall sign an agreement developed by the Commissioner. A participating State shall review and give permission for release of results from any test of its students administered as a part of this demonstration prior to the release of such data. Refusal by a State to release its data shall not restrict the reporting of data from other States that have approved the release of such data.

(v) The Commissioner shall provide for an independent evaluation conducted by a nationally recognized organization (such as the National Academy of Sciences or the National Academy of Education) of the pilot programs to assess the feasibility and validity of assessments and the fairness and accuracy of the data they produce. The report shall also describe the technical problems encountered and a description about what was learned about how to best report data from the National Assessment of Educational Progress. The results of this report will be provided to the Congress and to States which participated in assessments pursuant to paragraph (C) (i) and (ii) within 18 months of the time such assessments were conducted.

(D)(i)[2] The National Assessment shall have the authority to develop and conduct, upon the direction of the Board and subject to the availability of appropriations, assessments of adult literacy.

(3)(A) The National Assessment shall not collect any data that are not directly related to the appraisal of educational performance, achievements, and traditional demographic reporting variables, or to the fair and accurate presentation of such information.

(B) The National Assessment shall provide technical assistance to States, localities, and other parties that desire to participate in the assessment to yield additional information described in paragraph (2).

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[1] So in original. Probably should be "paragraph (6)(D)".
[2] So in original.

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(4)(A) Except as provided in subparagraph (B), the public shall have access to all data, questions, and test instruments of the National Assessment.

(B)(i) The Commissioner shall ensure that all personally identifiable information about students, their educational performance, and their families and that information with respect to individual schools remain confidential, in accordance with section 552a of title 5, United States Code.

(ii) Notwithstanding any other provision of the law, the Secretary may decline to make available to the public for a period not to exceed 10 years following their initial use cognitive questions that the Secretary intends to reuse in the future.

(C) The use of National Assessment test items and test data employed in the pilot program authorized in subsection (2)(C) to rank, compare, or otherwise evaluate individual students, schools, or school districts is prohibited.

(5)(A)(i) There is established the National Assessment Governing Board (hereafter [1] in this section referred to as the "Board").

(ii) The Board shall formulate the policy guidelines for the National Assessment.

(B) The Board shall be appointed by the Secretary in accordance with this subparagraph and subparagraphs (C), (D), and (E). The Board shall be composed of—

(i) two Governors, or former Governors, who shall not be members of the same political party;

(ii) two State legislators, who shall not be members of the same political party;

(iii) two chief State school officers;

(iv) one superintendent of a local educational agency;

(v) one member of a State board of education;

(vi) one member of a local board of education;

(vii) three classroom teachers representing the grade levels at which the National Assessment is conducted;

(viii) one representative of business or industry;

(ix) two curriculum specialists;

(x) two testing and measurement experts;

(xi) one nonpublic school administrator or policymaker;

(xii) two school principals, one elementary and one secondary;

(xiii) three additional members who are representatives of the general public, including parents.

The Assistant Secretary for Educational Research and Improvement shall serve as an ex officio member of the Board as a nonvoting member.

(C)(i) The Secretary and the Board shall ensure at all times that the membership of the Board reflects regional, racial, gender and cultural balance and diversity and that it exercises its independent judgment, free from inappropriate influences and special interests.

(ii) In the exercise of its functions, powers, and duties, the Board shall hire its own staff and shall be independent of the Secretary and the other offices and officers of the Department of Education.

[1] So in original. "Hereafter" probably should be stricken.

(iii) The Secretary may appoint, at the direction of the Board, for terms not to exceed 3 years, without regard to the provisions of title 5, United States Code, governing appointments in the competitive service, not more than 6 technical employees to administer this subsection who may be paid without regard to the provisions of chapter 51 and subchapter III of chapter 53 of such title relating to classification and General Schedule pay rates.

(D)(i) The members of the Assessment Policy Committee, serving on the date of enactment of the National Assessment of Educational Progress Improvement Act, shall become members of the Board for the remainder of the terms of the appointment to the Assessment Policy Committee.

(ii) To complete the initial membership of the Board, the Secretary shall appoint members of the Board as necessary in the categories described in subparagraph (B) for which there are no members continuing from the Assessment Policy Committee on the date of enactment of the National Assessment of Educational Progress Improvement Act. The Secretary shall appoint such members from among nominees furnished by the Governors, chief State school officers, education associations and organizations, the National Academy of Sciences, the National Academy of Education, parent organizations, and learned societies.

(iii) As vacancies occur, new members of the Board shall be appointed by the Secretary from among individuals who are nominated by the Board after consultation with representatives of the groups listed in subparagraph (B). For each vacancy the Board shall nominate at least 3 individuals who, by reason of experience or training, are qualified in that particular Board vacancy.

(E) Members of the Board appointed in accordance with this paragraph shall serve for terms not to exceed 4 years which shall be staggered, as determined by the Secretary, subject to the provisions of subparagraph (D)(i). Any appointed member of the Board who changes status under subparagraph (B) during the term of the appointment of the member may continue to serve as a member until the expiration of that term.

(6)(A) In carrying out its functions under this subsection, the Board shall be responsible for—

(i) selecting subject areas to be assessed (consistent with paragraph (2)(A));

(ii) identifying appropriate achievement goals for each age and grade in each subject area to be tested under the National Assessment;

(iii) developing assessment objectives;

(iv) developing test specifications;

(v) designing the methodology of the assessment;

(vi) developing guidelines and standards for analysis plans and for reporting and disseminating results;

(vii) developing standards and procedures for interstate, regional and national comparisons; and

(viii) taking appropriate actions needed to improve the form and use of the National Assessment.

(B) The Board may delegate any functions described in subparagraph (A) to its staff.

(C) The Board shall have final authority on the appropriateness of cognitive items.

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(D) The Board shall take steps to ensure that all items selected for use in the National Assessment are free from racial, cultural, gender, or regional bias.

(E) Each learning area assessment shall have goal statements devised through a national consensus approach, providing for active participation of teachers, curriculum specialists, local school administrators, parents and concerned members of the general public.

(F) The Secretary shall report to the Board at regular intervals of the Department's action to implement the decisions of the Board.

(G) Any activity of the Board or of the organization described in paragraph (1), shall be subject to the provisions of this subsection.

(7)(A) Not to exceed 10 percent of the funds available for this subsection may be used for administrative expenses (including staff, consultants and contracts authorized by the Board) and to carry out the functions described in paragraph (6)(A).

(B) For the purposes of its administrative functions, the Board shall have the authorities authorized by the Federal Advisory Committee Act and shall be subject to the open meeting provisions of that law.

(8)(A) Participation in the National and Regional Assessments by State and local educational agencies shall be voluntary.

(B) Participation in assessments made on a State basis shall be voluntary. The Secretary shall enter into an agreement with any State which desires to carry out an assessment for the State under this subsection. Each such agreement shall contain provisions designed to assure—

(i) that the State will participate in the assessment;

(ii) that the State will pay from non-Federal sources the non-Federal share of participation; and

(iii) that the State agrees with the terms and conditions specified in subsection (a)(2)(C)(iv).

(C)(i) For each fiscal year, the non-Federal share for the purpose of clause (ii) of subparagraph (B) shall be the cost of conducting the assessment in the State including the cost of administering the assessment at the school level for all schools in the State sample and the cost of coordination within the State.

(ii) The non-Federal share of payments under this paragraph may be in cash or in kind.

(9)(A) The Commissioner shall provide for continuing reviews of the National Assessment, including validation studies by the National Center for Education Statistics and solicitation of public comment on the conduct and usefulness of the National Assessment. The Secretary shall report to the Congress, the President, and the Nation on the findings and recommendations of such reviews. The Commissioner shall consider the findings and recommendations in designing the competition to select the organization through which the Office carries out the National Assessment.

(B) The Commissioner shall, not later than 6 months after the date of enactment of the National Assessment of Educational Progress Improvement Act, publish a report setting forth plans for the collection of data for the 1990 assessment and plans for including other subject areas in the 1992 and later assessments. The report shall include methods by which the results of the National

Assessment of Educational Progress may be reported so that the results are more readily available and more easily understood by educators, policymakers, and the general public, and methods by which items will be reviewed to identify and exclude items which reflect racial, cultural, gender, or regional bias. The report shall be developed after consultation with educators, State education officials, members of the Board appointed under paragraph (5), and the general public.

(C) The report required by this paragraph shall be submitted to the Congress and made available to the public. The appropriate authorizing committees of the Congress may request the Secretary to modify the plan contained in the report. The Secretary shall take such actions as may be appropriate to carry out the recommendations contained in the report.

(j) For purposes of this section, the terms "United States" and "State" include the District of Columbia and Puerto Rico.

(20 U.S.C. 1221e-1) Enacted August 21, 1974, P.L. 93-380, sec. 501(a), 88 Stat. 556, 559; amended April 21, 1976, P.L. 94-273, sec. 12(1), 90 Stat. 378; amended October 12, 1976, P.L. 94-482, sec. 401(c), 90 Stat. 2226; sec. 406, 90 Stat. 2231, 2232; sec. 501(q), 90 Stat. 2238; amended Nov. 1, 1978, P.L. 95-561, secs. 1201, 1212(a), (c), 1243(a), 92 Stat. 2333, 2334, 2338, 2341, 2353; see also general reference Oct. 17, 1979, P.L. 96-88, sec. 301, 93 Stat. 677; amended Oct. 19, 1984, P.L. 98-511, secs. 702(b), 704(b), 98 Stat. 2406; amended Oct. 17, 1986, P.L. 99-498, sec. 1402, 100 Stat. 1597; amended June 8, 1987, P.L. 100-50, §24(b), 101 Stat. 363; amended April 28, 1988, P.L. 100-297, secs. 3001, 3403(a), 102 Stat. 331, 344; amended November 16, 1990, P.L. 101-589, sec. 252, 104 Stat. 2894.

RESPONSIBILITY OF STATES TO FURNISH INFORMATION

SEC. 406A. (a) The Commissioner shall require that each State submit to him, within ninety days after the end of any fiscal year, a report on the uses of Federal funds in that State under any applicable program for which the State is responsible for administration. Such report shall—

(1) list all grants and contracts made under such program to the local educational agencies and other public and private agencies and institutions within such State during such year;

(2) include the total amount of funds available to the State under each such program for such fiscal year and specify from which appropriation Act or Acts these funds were available; and

(3) be made readily available by the State to local educational agencies and other public and private agencies and institutions within the State, and to the public.

(b) On or before March 31 of each year, the Commissioner shall submit to the Committee on Labor and Human Resources of the Senate and to the Committee on Education and Labor of the House of Representatives an analysis of these reports and a compilation of statistical data derived therefrom.

(20 U.S.C. 1221e-1a) Enacted August 21, 1974, P.L. 93-380, sec. 512(a), 88 Stat. 571; amended April 21, 1976, P.L. 94-273, sec. 17, 90 Stat. 379; amended October 12, 1976, P.L. 94-482, sec. 501(f)(2), (f)(3), 90 Stat. 2237; redesignated Nov. 1, 1978, P.L. 95-561, sec. 1231(a)(2), 92 Stat. 2342; see also general reference Oct. 17, 1979, P.L. 96-88, sec. 301, 93 Stat. 677; amended December 8, 1983, P.L. 97-211, sec. 18, 97 Stat. 1417.

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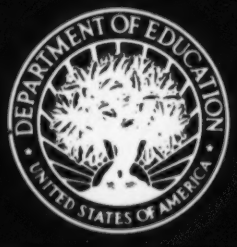

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